yellow
9 7/8 x 6 1/2
purple
9 5/8 x 6 3/8

~~£ a 50~~

SELENIPEDIUM CAUDATUM WALLISII.

(See page 355.)

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THE ORCHID REVIEW

An Illustrated Monthly Journal

DEVOTED TO ORCHIDOLOGY

VOLUME III

1895

Mo. Bot. Garden,
1898.

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"Accustomed as we are to look upon the animal and vegetable kingdoms as altogether distinct, our astonishment may well be awakened, when we see the various forms of the one appropriated by the flowers of the other; and yet such encroachments are but a part of the liberties which these Orchidaceæ are perpetually taking; for, as if it were too simple a matter to imitate the works of Nature only, they mimic the productions of art! But not contented to rest even here, they display a restless faculty of invention, fully equal to their powers of imitation, and . . . . thus we find their flowers exhibiting a variety of strange and unearthly objects, such as bear no resemblance to created things, nor yet to any of the works of man."—BATEMAN.

THE ORCHID REVIEW.

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NOTES.

THE present number commences our third volume, and we have the satisfaction of knowing that it will reach a number of new subscribers, whom we welcome among the circle of our readers. Some of the difficulties incidental to the establishment of a new work having been surmounted, we hope to find the course smoother in the future. It may not be amiss to again point out that THE ORCHID REVIEW not only aims at giving useful cultural and other information, but also to provide a means of communication between Orchidists generally, for the interchange of opinions and the recording of interesting facts, and we would again invite our readers to send us notes of their experiences in a form suitable for publication, which would no doubt increase the interest of the work. By this means, and by making it as widely known as possible among their friends, they would materially accelerate its progress and extend its usefulness. Lastly, we desire to thank all those who have assisted us in the past, and to wish all our readers a Happy New Year.

The programme of the Royal Horticultural Society for 1895 has not yet reached us, so that we are not able to announce the date of the next meeting.

A spike of a very handsome dark variety of Lælia anceps, called Chamberlain's variety, has been received from the collection of the Right Hon. J. Chamberlain, M.P., Highbury, Moor Green, Birmingham. The lip is very deep crimson-purple, and the front lobe over an inch broad. The petals are also sixteen to seventeen lines broad, and the flowers altogeth very large and handsome.

Catasetum × splendens, which was recorded last month, has also

appeared in the same collection, as is proved by a flower received from Mr. Burberry. The sepals and petals are very pale green, the latter barely under an inch and a quarter broad, and the widely expanded lip two inches and a quarter broad, deep yellow in the centre, inclining to greenish near the recurved margin, and with a well-developed crest. It is a very striking form, bearing most resemblance to C. Bungerothii.

Miltonia Roezlii radiata is a distinct and pretty variety which has also flowered at Highbury. It has the general character of the variety alba, but instead of a bright yellow disc, it has that organ of a pale creamy buff shade, on which are some pale purple radiating lines.

Two very pretty forms of Cypripedium × Leeanum come from Mr. James Cypher, Cheltenham. One is a very light green variety, without any spots on the dorsal sepal, corresponding pretty nearly, if not quite, to the variety albens. The other is a darker spotted form. C. × Leeanum and its varieties are among the best of the winter-flowering hybrids.

The beautiful Cypripedium insigne Sanderæ has been in flower for some weeks in the collection of G. S. Ball, Esq., Earlcliff, Bowden, from whom we have received an excellent photograph, which of course corresponds pretty closely with the one reproduced at p. 41 of our last volume.

A portion of the raceme of Catasetum Bungerothii with three flowers, from the collection of H. J. Elwes, Esq., Andoversford, illustrates a character occasionally seen in this genus. The flowers are males, but one shows a partial transition to the female flower in the shape and texture of the lip.

Mr. Shuttleworth, we are informed, has retired from the firm with which his name has for some time been connected, and which will now be carried on under the style of Charlesworth and Co., Heaton, Bradford.

A magnificent spike of Vanda cœrulea has been sent by E. H. Woodall, Esq., St. Nicholas House, Scarborough, which fully bears out his remarks at p. 362 of our last issue. It is one of seven from the same basket, and the flowers are both unusually large and dark in colour, such as we have rarely seen equalled, never surpassed. It is a great pity that it is so seldom seen in such perfection.

Dendrobium cymbidioides, of which a racème comes from H. J. Ross, Esq., of Florence, is a very pretty Javan species belonging to the section Sarcopodium. The flowers look more like those of Cœlogyne than of the genus to which it belongs, being white with some yellow and brown markings on the lip.

Cypripedium × Godseffianum has again been raised, this time in the collection of H. J. Ross, Esq., of Florence, the plant now flowering for the first time in very fine condition. Two plants of Arachnanthe Lowii are also flowering in the collection, each bearing three spikes of its remarkable dimorphic flowers.

Messrs. F. Sander and Co., St. Albans, send a three-flowered raceme of their very pretty hybrid Lælio-cattleya × Hon. Mrs. Astor, described at p. 111 of our last volume. Though a seedling from Cattleya Gaskelliana, the flowers are far more like those of Lælia xanthina, the pollen parent, both in form and colour. The sepals, however, are a fourth longer, and the petals twice as broad, both being a pleasing shade of light yellow. The lip is also a third longer, intermediate in shape, the front lobe rose-purple, with bright yellow throat and lilac margin. It is a handsome hybrid, and of a colour which is rare in the group.

ORCHIDS OF 1894.

In conformity with custom at the present season, we may here take a brief survey of the more important novelties of the past year, which have again been fairly numerous, as our pages month by month have indicated, more particularly in the department of the hybridist.

In the matter of species the year 1894 cannot produce anything of equal importance to the introduction in quantity of the beautiful Cypripedium Charlesworthii, which marked the preceding one, though several acquisitions of lesser importance have appeared. Besides which a new genus has been described from the collection of Sir Trevor Lawrence, Bart., under the name of Serrastylis modesta, Rolfe. It was sent from the Andes by Mr. F. C. Lehman to Mr. J. O'Brien, and afterwards flowered also with Major Joicey, at Sunningdale Park.

Of the forty new species described in the *Kew Bulletin*, which have also been chronicled in our pages, a considerable number are chiefly of botanical interest, among the exceptions being the following:—Dendrobium Sanderianum, a beautiful Bornean species with large white flowers, Cattleya Brownii, Oncidium Sanderianum, Oncidium Lucasianum, and Cœlogyne Swaniana from Messrs. F. Sander and Co., St. Albans. Dendrobium Hildebrandii, a handsome yellow-flowered species from the Shan States, and the remarkable Vanda Roeblingiana originated with Messrs. Hugh Low and Co., of Clapton. Messrs. James Veitch and Sons, Chelsea, must be credited with two brightly coloured Dendrobiums, D. glomeratum and D. subclausum, the latter with a remarkable lip. Eria cinnabarina, with its brilliantly coloured flowers, and Catasetum punctatum came from Messrs.

Linden, of Brussels. The remarkable Dendrobium hamatum was obtained from Cochin China by M. A. Regnier, Fontenay-sous-bois, France. Bifrenaria Charlesworthii was imported by Messrs. Charlesworth, Shuttleworth and Co., of Heaton, Bradford. Camaridium Lawrenceanum and Polycycnis Lehmanni flowered with Sir Trevor Lawrence, Burford, Dorking. The showy Epidendrum Ellisii originated with Welbore S. Ellis, Esq., Hazelbourne, Dorking; Cœlogyne Mossiæ with John S. Moss, Esq., Wintershill, Bishops Waltham, and Stanhopea nigripes flowered at Kew. The species chiefly of botanical interest flowered at Kew, Glasnevin, with Mr. James O'Brien, Harrow-on-the-Hill, Messrs. W. L. Lewis and Co., Southgate, and in several of the establishments above named. Others have been described as new, and have been mentioned in our pages, but several of them have no claim to the title, and others we have not seen, so that the record already given must suffice.

Of natural hybrids two very remarkable ones have appeared, namely, Vanda × Charlesworthii with Messrs. Charlesworth, Shuttleworth and Co., and afterwards with Messrs. Hugh Low and Co., and Catasetum × splendens and its varieties with Messrs. Linden and others, probably from the same importation. Cattleya × venosa also appeared with Messrs. Linden. Lælio-cattleya × Pittiana is a plant of doubtful origin, which appeared with Messrs. F. Sander and Co.

Striking varieties of natural hybrids already known, which cannot be overlooked, are Odontoglossum × Coradinei var. mirabile from the collection of Baron Sir H. Schröder, Cattleya × Hardyana Countess of Derby from T. Statter, Esq., Dendrobium × Rolfeæ roseum with Major-General E. S. Berkeley, and Lælio-cattleya × Schilleriana leucotata, now in the collection of R. H. Measures, Esq., who obtained it from Messrs. Linden.

Several splendid varieties of Odontoglossum crispum have appeared, notably those called grande-maculatum, Rex, and Baroness Schröder, at The Dell, Egham, Franz Masereel with Messrs. Vervaet and Co., and Capartianum with M. A. A. Peeters, some of which were figured in our pages. Then the pretty albino, O Rossii immaculatum, in the collection of O. O. Wrigley, Esq., must not be omitted, while the varieties of Cattleya labiata recorded last month by us need not be repeated.

The flowering at Kew of two species of Neuwiedia, the simplest Orchid known, and the re-appearance of the female flower of Cycnoches Loddigesii, in the collection of H. J. Elwes, Esq., after a lapse of over half a century are also among the memorable events of the year.

We must now pass along to the hybrids, which seem to become more numerous each year, and here we find some sterling acquisitions to record, among the more interesting, on account of the novelty of the crosses, being Sobralia × Veitchii and Sophro-lælia × læta from Messrs. James Veitch and Sons; Epilælia × Hardyana and Lælio-cattleya × Frederick Boyle

from Messrs. F. Sander and Co., and Lælia × amæna from C. J. Ingram, Esq. The following list includes the more important ones which have been recorded in our pages, and their parentage will be found recorded in our last volume.

From the establishment of Messrs. James Veitch and Sons have emanated :—Dendrobium × Euryalus, D. × Cordelia, D. × Virginia, Cattleya × Wendlandiana, C. × Atlanta, C. × Faba, Lælio-cattleya × Parysatis, L.-c. × Tydea, L.-c. × Zephyra, L.-c. × Decia, Sophro-cattleya × eximia, Masdevallia × Asmodia, Disa × Diores, D. × langleyensis, Epidendrum × Wallisio-ciliare, Cypripedium × James H. Veitch, C. × Merops, and others.

Messrs. F. Sander and Co. have originated among others :—Cattleya × Browniæ, C. × Mrs. M. Wells, C. × Kienastiana, Lælio-cattleya × Hon. Mrs. Astor, Phaius × Marthæ, P. × Owenianus, Selenipedium × Stella, Cypripedium × Tryanowskyanum, C. × Arnoldiæ, C. × Doncasterianum, &c.

Norman C. Cookson, Esq. :—Lælio-cattleya × Doris and Dendrobium × Doris.

C. Dorman, Esq. :—Cattleya × Arthuriana.

R. le Doux, Esq. :—Cypripedium × Lauræ.

H. Graves, Esq. :—Cypripedium × Gravesiæ, C. × calloso-Argus, C. × Echo, and C. × Pelias.

Captain T. C. Hinks :—Masdevallia × Doris.

M. Jules Hye-Leysen :—Cypripedium × Leysenianum.

Sir Trevor Lawrence, Bart. :—Cypripedium × The Pard.

William R. Lee, Esq. :—Cypripedium × W. R. Lee.

Messrs. W. L. Lewis and Co. :—Cypripedium × Bookeri.

Messrs. Linden :—Cypripedium Robinianum and C. × Denisianum.

S. G. Lutwyche, Esq. :—Dendrobium × Lutwycheanum.

M. Georges Mantin :—Cattleya × Mantinii.

R. I. Measures, Esq. :—Cypripedium × Annie Measures, C. × Nandii, C. × Zeus, and others.

Messrs. Pitcher and Manda :—Cypripedium × Allanianum.

H. J. Ross, Esq. :—Cypripedium × Janet Ross.

Baron Sir H. Schröder :—Dendrobium × dellense.

T. Statter, Esq. :—Cypripedium × excellens and C. × gloriosum.

W. Vanner, Esq. :—Cypripedium × Io-Spicerianum.

Mr. P. Weathers :—Cypripedium × William Lloyd.

M. Wells, Esq. :—Lælio-cattleya × Wellsiæ.

C. Winn, Esq. :—Masdevallia × Jessie Winn.

ONCIDIUM × WHEATLEYANUM.

At the meeting of the Royal Horticultural Society on November 13th last an inflorescence of this richly coloured and beautiful Oncidium was exhibited by F. Wheatley, Esq., Ringmore, Teignmouth, Devon, which received an Award of Merit. It was described over a year ago by the late Mr. Gower (*Garden*, 1893, ii. p. 227) as a new species, but I am convinced that it is another of those curious natural hybrids of which, until quite recently, so little was known. Its history is thus stated:—It was purchased with two or three imported specimens as Oncidium Gardneri, Lindl., which presumably might be one of the parents. I have, however, shown that there are good grounds for believing O. × Gardneri to be a natural hybrid between O. Forbesii and O. dasytyle (Orchid Review, i. pp. 301, 302). O. × Wheatleyanum further differs from O. × Gardneri in having a high central keel to the crest, the margin of the lip and the column wings entirely red-purple, instead of being spotted, and the sepals and petals uniformly purple, all of which characters would be explained if O. crispum had replaced O. Forbesii as the second parent, and this I believe is precisely what has taken place. In shape it is very much like O. × Gardneri, as might be expected, with the differences above pointed out. The lip is clear yellow with the exception of the margin and base, the latter, with the crest, being deep blackish maroon, a colour evidently derived from O. dasytyle, as also in the case of O. × Gardneri. The contrast of colour is very rich and striking. At present the plant is unique—whether it will remain so remains to be proved, though it is far more likely than if it were a species—at all events, until hybridists take the matter in hand.

R. A. Rolfe.

BLETIA REFLEXA.

A very interesting plant has re-appeared, after being lost sight of for something like sixty years. It is Bletia reflexa, Lindl. (*Bot. Reg.*, xxi. t. 1760), a Mexican species which flowered in the establishment of Messrs. Loddiges, of Hackney, in November, 1834. It has now re-appeared in the collection of H. J. Elwes, Esq., Colesborne, Andoversford, Gloucestershire. It is a little over a foot high, with the usual habit, and grass-like leaves about a third of an inch broad. The flowers are about one and a quarter inches long, the sepals and petals lanceolate, bright purple in their upper half, but veined with light green below. The lip is three-lobed, the front lobe and tip of the side ones being purple, while the rest of the side lobes is light green, closely veined with dusky brown. On the disc of the front lobe are situated five linear, acute, white keels. It is a very distinct species, and its re-appearance is very interesting.

R. A. R.

SOME CATTLEYA LABIATA VARIETIES.

We may supplement the list of Cattleya labiata varieties given in our last number (vol. ii. p. 357) with a short account of three others which have come under our notice :—

C. l. lilacina was exhibited by Messrs. Hugh Low and Co., Clapton, at the Royal Horticultural Society's meeting on November 13th last. It has light lilac sepals and petals, and the front lobe of the lip is a peculiar blue purple or slaty blue. Thus it is allied to C. l. delicata, but darker in colour.

C. l. pallida is a very pretty variety from the collection of J. W. Arkle, Esq., Holly Mount, West Derby, Liverpool. The flowers are of a nearly uniform pale rosy lilac, the usual crimson of the front lobe of the lip being absent, and the disc rather pale. It is a well-shaped flower, and typical in other respects. It must not be confounded with a plant figured in the *Orchid Album* (iii. t. 121) as C. l. pallida, which is really C. Gaskelliana.

C. l. Weathersiana is another beautiful variety, which was exhibited at the Royal Horticultural Society's meeting, on November 27th last, by Mr. P. Weathers, Silverhall Nursery, Isleworth. Its flowers are large and of good form, the colour blush white with a few pink nerves on the lip, and some orange deep down in the throat.

We note in the *Gardeners' Chronicle* for December 15th, p. 723, a note by Udo Dammar on a variety bearing the name of C. l. autumnalis alba, which flowered with M. Keyssner, of Zossen, Germany. The flowers are said to be white, with two large purple spots at the apex of the lip, which is finely rose-coloured and striated below. It is not C. l. alba (*supra*, i. p. 8), which is pure white with a very light yellow throat, and as it appears to be different from any described variety, may bear the name of C. l. Keyssneri.

MASDEVALLIA TOVARENSIS VAR. MOOREANA.

Singularly little variation has been observed in the charming little Masdevallia tovarensis, and this chiefly in the size of the flowers—a peculiarity common to flowers which are normally white. A variety which has appeared in the establishment of Messrs. F. Sander and Co., St. Albans, forms a notable exception, as it has the tails of the sepals light orange-red, becoming almost scarlet towards the tips, giving it quite a distinct appearance, and forming a very pleasing contrast with the typical form. It appeared in an importation of M. tovarensis, and in other respects agrees with that species, so that it is evidently a variety of the same. It is dedicated, by request, to Mr. F. W. Moore, A.L.S., of the Royal Botanic Garden, Glasnevin.

CYPRIPEDIUM INSIGNE AND ITS VARIETIES.

THE varieties of Cypripedium insigne have become surprisingly numerous during the last few years, in fact recent importations of the so-called "montanum" type have shown an amount of variation totally unexpected, especially when it is remembered that the species had been in cultivation for something like forty years before the first one (Maulei) was described, and that for many years afterwards they could be counted on the fingers of one hand. The recent accessions to the ranks have given a great stimulus to the cultivation of this useful old autumn-flowering plant—just such an one as was needed, in fact, for it yields to no other Orchid in the ease with which it can be grown. How great an interest centres in these varieties at the present time may be inferred from the fact that over twenty of them have recently come into our hands, and we have therefore in the present paper tried to give an account of the principal ones hitherto described.

The typical Cypripedium insigne (Wall., ex *Lindl. Coll. Bot.*, t. 32) was sent from the Calcutta Botanic Garden, by Dr. Wallich, and flowered for the first time in England, in the Liverpool Botanic Garden, in the autumn of 1820. It is characterised by having the apical third, or rather less, white, and the remainder light green with rather numerous dusky brown spots.

C. i. Maulei (T. Moore in *Fl. Mag.*, 1861, t. 57) flowered with Messrs. Maule and Sons, of Bristol, in 1860, and received a First-class Certificate from the Royal Horticultural Society. It differs in having the green area reduced in size, so that the white extends nearly to the base on either side, and leaves the uppermost spots clear purple, instead of purple-brown. The spots are also larger and fewer in number.

C. i. Chantini (Rafarin in *Rev. Hort.*, 1866, p. 429, also 1878, p. 130, with plate) appeared among a number of imported plants purchased by M. Chantin, a nurseryman of Paris, from Messrs. James Veitch and Sons, of Chelsea. It has a larger dorsal sepal than the variety Maulei, which it otherwise much resembles, except that the green area is rather more reduced, so as to leave a few of the spots clear purple along the sides. Afterwards it received the name of C. i. Veitchianum (*Fl. des Serres*, xxi. p. 72).

Scarcely, if at all, different from the preceding is C. i. punctato-violaceum (*Gard. Chron.*, 1882, ii. p. 717, fig. 127; *Orchid Album*, vi. t. 278), which was also confounded with C. i. Maulei before its characters were properly understood. Although not described till afterwards, it would appear that this was the first variety of C. insigne known, as it is said to have appeared among a small importation made by Messrs. E. G. Henderson and Son, in 1855, though it was not until 1869 that a small number of plants were distributed.

C. i. aureum (*Flor.* and *Pomol.*, 1882, p. 75) is a distinct and attractive form, which received a First-class Certificate from the Royal Botanic Society in March, 1882, when exhibited by Mr. W. Bull, of Chelsea. It differs from

the type in having the ground colour of the dorsal sepal yellow, and the petals and lip of a light brownish yellow shade.

C. i. albo-marginatum (*Orchid Album*, v. t. 232) has the flowers distinctly yellowish, and the dorsal sepal broadly margined all round with white, the spots being rather light in colour, and entirely limited to the yellowish green disc.

C. i. Sanderæ (*Gard. Chron.*, 1888, ii. pp. 606, 692; *Orchid Review*, ii. p. 41, fig. 5) is the beautiful light yellow unspotted variety, whose history and a figure were given in our last volume.

C. i. Horsmanianum (Rchb. f. in *Gard. Chron.*, 1888, ii. p. 693) appeared in the establishment of Messrs. F. Horsman and Co., Colchester, and is characterised by having long and narrow sepals, but of the usual colour.

C. i. Hallianum (Rchb. f. in *Gard. Chron.*, 1889, i. p. 168) is much like the preceding, but is said to differ in having spotted petals. The dorsal sepal has a long greenish disc, on which are some fine nearly chocolate-brown spots. It appeared with Mr. W. Hall, of Upper Tulse Hill, London, S.W.

C. i. Macfarlanei (Rolfe in *Gard. Chron.*, 1890, ii. p. 655) differs from C. i. Sanderæ in having considerably narrower sepals and petals of rather deeper yellow. It appeared in the collection of R. H. Measures, Esq., The Woodlands, Streatham.

C. i. longisepalum (Rolfe in *Gard. Chron.*, 1891, i. p. 72) has the long and narrow sepals of C. i. Horsmanianum, but the dorsal sepal is light green, suffused with light dusky brown on the dorsal half, without any spots, and the white area at the apex reduced to the smallest dimensions. It appeared with Messrs. F. Sander and Co., St. Albans.

C. i. Bohnhofianum (*Gard. Chron.*, 1891, ii. p. 586; *Orchid Review*, ii. p. 98) is a strikingly distinct form. The dorsal sepal has a large brown, nearly circular area extending from the base to the middle, above this a light green zone a quarter inch broad, the remainder being white. It is typical in shape. It appeared in the establishment of Messrs. F. Sander and Co., St. Albans.

C. i. Le Doux's var. (O'Brien in *Gard. Chron.*, 1892, i. p. 363) is described as intermediate between the varieties Bohnhofianum and albo-marginatum, there being some faint brownish lines on the green area of the dorsal sepal, and around this a broad white margin, while the petals are yellow, with some obscure tracings of brown, and the lip lighter than usual. It appeared with G. le Doux, Esq., Langton House, East Molesey.

C. i. Sanderianum (*Orchid Review*, i. p. 145, fig. 10) approaches C. i. Sanderæ in general character, but is smaller, has a shorter, rounder dorsal sepal, and is not quite so clear a yellow. The general resemblance is readily seen in our two figures. It is in the celebrated collection of Baron Sir H. Schröder, The Dell, Egham.

C. i. Ernesti (*Orchid Review*, i. p. 362) closely resembles C. i. Sanderæ, but has light purple spots on the dorsal sepal. It appeared in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell.

C. i. albens (*Orchid Review*, i. p. 372) is another beautiful soft greenish yellow form, with the upper half of the dorsal sepal white, and thus is allied to C. i. Sanderiana, Messrs. Heath and Son, of Cheltenham, received an Award of Merit for it in October, 1893, from the Royal Horticultural Society.

C. i. radiatum (*Orchid Review*, i. p. 374) has the dorsal sepal unspotted, but the green area rayed with light purple-brown near the base. It appeared in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell.

C. i. illustre (*Orchid Review*, ii. p. 29) appeared in the same collection as the preceding, and received an Award of Merit from the Royal Horticultural Society in November, 1893. It is a yellowish variety, with deep brown spots on the sepals and petals.

C. i. Gravesianum is a very pretty form from the collection of H. Graves, Esq., Orange, New Jersey. It has the shape and bright yellow colour of C. i. Macfarlanei, but the lower part of the dorsal sepal is of a uniform bright deep brown. It was at first thought to be C. i. Bohnhofianum (*Orchid Review*, ii. p. 40), but having now seen that variety, we can say that the present one is very distinct.

C. i. Mooreanum (Williams in *Orchid Album*, x. t. 445) appeared with Messrs. B. S. Williams and Son, Upper Holloway, and was named after the late Mr. T. Moore. It has a large whitish green dorsal sepal, with very numerous large purple-brown spots, the lower sepal longer than usual, and some small spots at the base of the petals.

C. i. Eyermanianum is a very pretty light yellow form, with a few very small light brown spots on the lower half of the dorsal sepal. It is typical in shape. We have received a flower from the rich collection of R. H. Measures, The Woodlands, Streatham, together with some of those mentioned above.

C. i. corrugatum is peculiar in having the lip distinctly corrugated or fluted, though fairly typical in other respects. A flower has been sent by O. O. Wrigley, Esq., Bridge Hall, Bury, Lancashire, together with numerous other varieties.

C. i. sylhetense is a name we have met with on more than one occasion, and seems to be characterised by having very numerous dark spots, which are somewhat confluent in lines along the middle. This is the character of a flower sent by H. J. Ross, Esq., Poggio Gherardo, Florence, Italy.

C. i. Lutwycheanum, which recently appeared in the collection of S. G. Lutwyche, Esq., Eden Park, Beckenham, may be described as C. i. Maulei, with yellow ground. It is like C. i. Ernesti, but has the spots on the dorsal sepal much more distinct.

A very remarkable abnormal form has flowered in the collection of W. M. Appleton, Esq., Tyn-y-Coed, Hill Road, Weston-super-Mare, of which we have received two flowers and a photograph. One flower alone is normal, the other five in each case having the two petals transformed into lips, which stand forward and clasp the normal lip, except at the apex. The staminode and stigma are both smaller than usual, and the two anthers completely obliterated. The sepals are normal. It will be interesting to observe if the character is constant. Mr. Appleton is inclined to attribute it to the plant being rather pot-bound.

Another curious abnormal form has appeared in the collection of H. Tate, junr., Esq., Allerton Beeches, Liverpool, in which the lower sepal is an exact reproduction of the dorsal one, both in size and colour. Both flowers on the plant show the same peculiarity.

The above varieties do not exhaust the list, especially among the spotted forms, several of which have received distinctive names, though their characters do not seem to have been very exactly recorded, and in some cases not at all. Further, we have reason to believe that in one or two cases they exist in different collections under different names. These, however, must be left for the present. Possibly if the material comes to hand we may be able to revert to them on some future occasion. Two or three other yellow forms have also received distinctive names, though we do not know in what respect they differ from varieties mentioned above.

Some of these varieties are still very rare, though in the case of a species so easily propagated they are not likely to remain so long, and a collection of the more distinct ones in flower together would be a very interesting sight.

CATTLEYA × O'BRIENIANA.

Information about this very pretty Cattleya comes to light very slowly, but that now to hand places its origin in a totally new light. M. A. A. Peeters, of St. Gilles, Brussels, has flowered a plant out of an importation of C. dolosa, Rchb. f., from the province of Minas Geraes, Brazil, which is certainly identical with that introduced by Messrs. F. Sander and Co., some five or six years ago. That originally flowered at St. Albans in December, 1889, and a year later it received an Award of Merit from the Royal Horticultural Society. And from inquiries made I am inclined to think it came either with C. dolosa or C. Loddigesii, or both—at all events, I am told that the last named has been received from the same region. When originally examining it, from flowers alone, I found so many points of resemblance to C. Loddigesii that I thought it must be a peculiar variety of that species, but I now believe it is a natural hybrid between C. Loddigesii and C. dolosa. It is about intermediate in habit and stature, some

of the pseudobulbs having one and others two leaves, as in the latter, but the psuedobulbs taller and more elongated, thus approaching C. Loddigesii. The flowers also are about intermediate, having the side lobes of the lip reduced in size, which shows the influence of C. dolosa, as well as a certain approach to it in the general aspect of the flower, though, on the other hand, the shape of C. Loddigesii is equally apparent, and both the light whitish-yellow disc of the lip and the small purple spots of the sepals and petals are present in C. × O'Brieniana. Thus the evidence seems fairly conclusive. Had I known the history of the plant from the outset, and been able to compare it with each of the supposed parents, its hybrid origin might have been suspected before. It is a very interesting and pretty little plant.

R. A. ROLFE.

DIES ORCHIDIANÆ.

"CATTLEYA guttata Prinzii, Viscount de Figueiredo, new var.," is the name which has been given to a handsome Cattleya which has appeared in the collection of the Right Hon. Lord Rothschild at Tring Park. It is rather a puzzle, I confess, and the only conclusion I can arrive at is that it is a variety of a variety—perhaps a subvariety is what is intended. But I cannot help thinking that such inordinately attenuated names are quite unnecessary. Besides which, there is the further question whether the name is not incorrect. I have twice recently seen it stated that Reichenbach's Cattleya guttata Prinzii is not a variety of C. guttata at all, but the Cattleya amethystoglossa of the same author, which the published figures certainly confirm. This simplifies the matter considerably, without, however, shortening the name much. The new variety seems to differ in having a "distinctly yellow" ground instead of white, just as the variety rosea differs in having it light rose-colour. It is a great pity that varieties cannot be indicated by the addition of a single name.

And while on the subject, there is another perplexing nomenclature question that may be mentioned, namely, the changing of names for no apparent reason. The other day *The Gardeners' Chronicle* gave an account of an abnormal flower of Cypripedium × Canhamiæ, which, so far as I can ascertain, is the plant described a few years ago as C. × Mrs. Canham. But the very same week they recorded Cattleya labiata Peetersii, described in THE ORCHID REVIEW (ii. p. 78) as C. labiata Peeter's variety, though it was exhibited under its correct name, as recorded in your Report. On what principle the English should be latinised in one case, and the Latin anglicised in the other, I fail to understand. A different example is furnished by Cypripedium × Millmani, exhibited by the raiser, A. J. Hollington, Esq.,

on July 24 last; but a fortnight later the self-same plant was exhibited by Messrs. W. L. Lewis and Co. as C. × calloso-lævigatum. Your report differs from others in using the original name in each case, but it was not so exhibited on the latter occasion.

And here is yet a third example. A Cypripedium exhibited by M. Jules Hye-Leysen was certificated by the Orchidéene, of Brussels, last autumn, as C. × Meteor, and by the Royal Horticultural Society as C. × Charles Richman. *The Journal of Horticulture* figured it under the former name, and *The Gardeners' Magazine* under the latter. This case was alluded to at page 303 of the last volume, and I quite endorse the remarks there made.

I suppose many of these difficulties arise from the large number of hybrids of similar parentage which are being raised in different collections, but all the same it is very confusing, and some of it surely might be avoided.

ARGUS.

CYPRIPEDIUM CHARLESWORTHII.

Out of my forty to fifty plants of Cypripedium Charlesworthii, I have bloomed about a dozen, and find considerable variation in the colour of the flowers, and the shape and size of the dorsal sepal. Most of them have had light rose coloured flowers, grained with white, the dorsal sepal has been much reflexed, and the leaves of the plants have been small and narrow. A few plants, having much longer and broader leaves, have produced flowers of a uniformly deep tint of rose colour, and a very broad dorsal, which does not reflex in the slightest degree. The most noteworthy variety, of which only one bud has appeared, is one having a grass-green flower stalk, instead of the usual deep purple or almost black stalk, common to all the other blooms. I watched the growth of this peculiar bud with great interest, until it had reached the height of three and a quarter inches, when to my extreme disappointment its growth seemed to be suddenly arrested, and decay set in. This decay I attribute either to the smoking of the house in which the plant was growing, or to the dense and smoky fogs which have been prevalent in this district during the early part of December. On cutting off the flower stalk, and opening the bud sheath, the bud itself was just beginning to decay, but dissection almost led me to expect that the dorsal would have been white, and the pouch of a very dark brown. I record these facts in the hope that they may interest yourself and your readers.

Bridge Hall, Bury. O. O. WRIGLEY.

THE HYBRIDIST.

Epidendrum × Wallisio-ciliare.

Last month we had a hybrid from Epidendrum ciliare to record, and now another appears upon the scene, raised by Mr. Seden in the establishment of Messrs. James Veitch and Sons. The species named was the seed-parent, the pollen being derived from E. Wallisii. The characters of the pollen-parent largely preponderate in the hybrid, as the tallest stem is nearly a foot high, cylindric, slightly swollen at the middle, and bears six or seven alternate leaves towards the summit. These are narrowly elliptical-oblong in shape, and about six inches long. The inflorescence at present bears two flowers, in which the characters of E. Wallisii are also most apparent, though the segments are more lanceolate and less spreading. They are an inch and a quarter long, and uniformly bright yellow. The lip is entire, broadly orbicular-oblong, and ten lines broad, with the margin shortly fimbriate and somewhat undulate; the colour pale, nearly primrose-yellow, with four or five short radiating maroon-purple lines on either side of the deep yellow crest. The influence of the seed-parent is seen in the shape of the leaves and segments and the fimbriation of the lip. It is very distinct and pretty, and as this is the first time of flowering it will doubtless improve. It was exhibited at the Drill Hall on December 11th last.

Cypripedium × Bookeri.

This handsome hybrid was exhibited at the meeting of the Royal Horticultural Society on October 9th last, by Messrs. W. L. Lewis and Co., Southgate, and received an Award of Merit. The parents are Cypripedium ciliolare ♀ and C. Spicerianum ♂, and we understand that Mr. Ayling was the raiser. The dorsal sepal is ample, white with a broad deep purple median band and some paler stripes on either side; the petals distinctly spotted, and the lip suffused with purple brown.

Cypripedium × conco-callosum.

Another very pretty little hybrid must now be added to those raised from C. concolor, the above having been raised in the collection of R. H. Measures, Esq., The Woodlands, Streatham, from whom we have received the flower. It was obtained by crossing the species just named with the pollen of C. callosum. As might be expected, it is allied to C. × conco-Lawre (*supra*, ii. p. 337, fig. 33), though quite distinct. The dorsal sepal is nearly orbicular, and almost wholly suffused with light rosy purple, the veins being a little darker, and the base light green with a few dusky spots. The petals are very light green near the base, the remainder being suffused with light rosy purple, and bearing many minute dusky spots, less numerous towards the apex. There is a slight approach to

the falcate petals of the pollen-parent. The lip is small and pale green, and the staminode small and approaching that of C. callosum in shape. The one other ally is C. × tessellatum, in which the allied C. barbatum was used as the pollen-parent. It is a very pretty little hybrid, and has probably not yet attained its full development.

Cypripedium × Aspasia.

This distinct and attractive hybrid was raised in the establishment of Messrs. F. Sander and Co., St. Albans, from C. × selligerum majus and C. tonsum, and we have now received the two-flowered scape. It has the general habit of the former, and the dorsal sepal is veined in a very similar manner. The petals, however, are shorter and less pointed, being under four inches long, less ciliate, light purple in colour, with a few small purple spots in the middle as well as along both margins, all of which characters show distinctly the influence of C. tonsum. The lip approaches C. × selligerum in shape, and is deep purple in colour, while the staminode is much like that of C. tonsum. The leaf is tessellated with two shades of green. It forms an attractive addition to the C. × selligerum group.

Lælio-cattleya × Trentonense.

This we believe is the first hybrid of the group which has flowered in the United States. It was derived from Lælio-cattleya × elegans ♀ and Lælia pumila ♂. The pseudobulbs are clavate, diphyllous, four to five inches long, and the leaves ovate, and three to four inches long. The scape is at present one-flowered. The flowers are four inches across, the sepals and smaller undulated petals being oblong-lanceolate in shape, and lilac-rose in colour. The lip is distinctly trilobed, the lobes all rounded at the tips and undulated; the side lobes lilac-rose outside, and the front lobe rose-crimson, which is continued along the apex of the side lobes, the veins being slightly deeper in colour. The throat is lemon-yellow, paler on the sides, banded down the centre with rose-crimson, and the keel-like ridges found in L. pumila faintly represented at the base.

R. M. Grey.

Cypripedium × Hurrellianum.

A hybrid derived from C. Argus ♀ and C. Curtisii ♂, which is now flowering in the rich collection of C. G. Rœbling, Esq., Trenton, New Jersey, U.S.A., under the care of Mr. H. T. Clinkaberry. The flowers are over four inches across; the dorsal sepal broadly ovate, acute, white, translucent toward the base, tinted with vinous purple and veined with pale green, the veins being dotted with deep vinous brown. The petals are drooping, with heavy dark ciliated margins, white with vinous suffusion, veined with light green, and thickly studded with raised, deep vinous purple spots. The lip is somewhat larger than in the male parent, dusky vinous brown, paler

beneath, where it is also shaded with green; the unfolded lobes dotted with purple. The staminode is vinous green. The name is given in compliment to Mr. H. Hurrell, Orchid grower to Messrs. Pitcher and Manda, Short Hills, New Jersey.

R. M. GREY.

CATTLEYA BOWRINGIANA VAR. ASHWORTHII.

A very pretty variety of Cattleya Bowringiana has appeared in the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow, in which the flowers are of a nearly uniform light rose-purple, with the exception of the usual pale throat; thus it differs from the type in having lost the broad dark rose-purple margin of the lip. Flowers of the type and of the variety violacea are also sent. The latter differs in having the dark zone of the lip violet-purple, and the sepals and petals also show a trace of the same colour. Placed side by side they form a very charming little group, and all possess the same free-growing habit and floriferous character. Introduced ten years ago, this useful autumn-flowering species was soon taken in hand by the hybridist, and the results now begin to show themselves, no less than five having been described in our last volume, viz., Cattleya × Wendlandiana, C. × Browniæ, C. × Mantinii, Lælio-cattleya × Parysatis, and Sophro-cattleya × eximia. Cattleya × Chloris, described in the previous volume, also has the same origin. We anticipate the appearance of many others within the next few years.

ODONTOGLOSSUM × WILCKEANUM DOBBELAERÆ.

A very beautiful variety of Odontoglossum × Wilckeanum has just flowered in the collection of M. P. Dobbelaere, of Gand, of which a flower has been kindly sent us. It combines almost the shape of O. crispum with the clear yellow of O. × Wilckeanum sulphureum. The latter, however, markedly differs in its much longer and narrower sepals and petals, which, like those of O. × W. elegans (*Orchid Review*, i. p. 135), have almost the shape of O. × luteopurpureum. The flower sent has one petal unspotted, and the other with two small cinnamon spots in the centre, while the dorsal and one lateral one have a single spot, and the other four small spots in the centre. The lip also is without a cinnamon blotch in front of the crest. Individual flowers will, of course, vary in slight details, but the essential characters of this charming variety are its clear canary-yellow flowers and broad, slightly spotted segments. Besides the colour, there is the unmistakable influence of O. luteopurpureum in the shape of the lip, the crest, and the much-fimbriated column wings. It is very distinct and handsome, and illustrates once more the great variability of these natural hybrids. It is dedicated, by request, to the wife of M. Dobbelaere.

CATTLEYA × VICTORIA-REGINA.

It is with particular pleasure that we present our readers with a correct figure of the beautiful Cattleya × Victoria-Regina, reproduced from a photograph of the plant in the collection of W. J. Thompson, Esq., Walton Grange, Stone, Staff., which was kindly taken for us by that gentleman's able gardener, Mr. Walter Stevens, and which, we may add, does him equal

Fig. 1. CATTLEYA × VICTORIA-REGINA.

credit both in the capacity of gardener and of amateur photographer. The history of the plant will be familiar to our readers, having been given in detail in our last volume. An objection has been taken to our theory of its being a natural hybrid, on the ground that neither flower, bulb, leaf, growth, nor season of blooming, lend any support to it, but the publication of the present figure will effectually dispose of the objection. It is well

known that all hybrids between a monophyllous Cattleya (or Lælia) with entire lip and a diphyllous one with three-lobed lip have both monophyllous and diphyllous pseudobulbs on the same plant, and flowers with a three-lobed lip, though otherwise intermediate in character. The identity of the present plant in these respects with Cattleya × Harrisii (C. Leopoldi × C. Mendelii) and Lælio-cattleya × elegans (C. Leopoldi × Lælia purpurata) is significant, and when we remember the fact that the few known individuals came with importations of Cattleya Leopoldi var. pernambucensis and C. labiata, which grow together in the Pernambuco district, and that all flower together in the autumn, the demonstration is complete. It is about intermediate in habit, the short clavate pseudobulbs of C. labiata with a single longish leaf, and the longer more terete diphyllous ones of the other parent being equally well represented, though both are somewhat modified in shape, as is invariably the case. The flowers are as unmistakably intermediate, in size, shape, and colour, though the lip is most like that of C. Leopoldi in shape. The spots of the latter are nearly obliterated, as they usually are in hybrids derived from it, but a few minute purple dots were present near the tips of some of the petals. This plant was exhibited at the Royal Horticultural Society's meeting on November 27th last, side by side with the one from the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, to which we have previously alluded, and attracted a large amount of attention. Both of them present the same curious combination of characters, and we consider that both the origin and parentage of this handsome Cattleya are now conclusively proved. We only know of these two plants, though we are told that there is another somewhere in Belgium, and that there may be as many as half a dozen altogether in cultivation. The remainder which were sold under this name have proved to be C. Leopoldi var. pernambucensis, one of the parents. Viewed in the above light its rarity is not surprising, but we have the satisfaction of knowing that our remarks induced hybridists to take the matter in hand, so that a larger stock will in due time be forthcoming, though the plants cannot reach the flowering size for several years. It only remains to add that the present plant was obtained from Messrs. F. Sander and Co., St. Albans, in March, 1892, at one of their sales, and that the colour of the flowers is a nearly uniform light rose-purple of very pleasing shade.

CATASETUM × SPLENDENS VAR. IMPERIALE.

Another very remarkable and handsome Catasetum has flowered with Messrs. Linden, L'Horticulture Internationale, Brussels, for which the name of C. imperiale, Lind. and Cogn., has been proposed. It has a lip almost like that of C. Bungerothii in shape, but somewhat verrucose inside,

and the colour intense deep maroon-purple, except that the apical margin, and a small area in front of the sac, are yellowish white. The sepals and petals are also yellowish white, the latter being barred and spotted with maroon-purple on the basal half, in which respect, as also in shape, they resemble C. macrocarpum. The raceme bears fourteen flowers. The plant appeared in a recent importation made by Messrs. Linden, which yielded the remarkable C. × splendens and its varieties described at p. 355 of the last volume. It is evidently a natural hybrid between C. Bungerothii and C. macrocarpum, and thus another form of the same series, which may be called C. × splendens var. imperiale. The intense colour of the lip is remarkable, but not inexplicable, for there are some forms of C. macrocarpum, which have the inside of this organ of an even deeper colour, which has been reproduced in the hybrid. The more brilliant colour results from the absence of green in the flower. The crest of C. macrocarpum is practically obsolete, as in one or two of those previously described. It is the richest coloured Catasetum which I have yet seen, and one can only regret that it is likely to remain rare, if not indeed unique.

R. A. ROLFE.

NOVELTIES.

VANDA KIMBALLIANA VAR. LACKNERÆ, Kränzl.—A beautiful albino, which appeared in the collection of Mr. C. Lackner, at Steglitz, near Berlin.—*Gard. Chron.*, Oct. 27, p. 498.

BULBOPHYLLUM PERPUSILLUM, Wendl. and Kränzl.—A very minute species from Madagascar, which flowered in June last, at Herrenhausen, under the care of M. Wendland. The minute flowers are white, the petals suffused with rose, and the callus of the lip hairy.—*Gard. Chron.*, Nov. 17, p. 592.

BULBOPHYLLUM JOHANNIS, Wendl. and Kränzl.—Another minute Madagascar species, like the preceding, sent home by the late Mr. Johannes Braun, and flowered at Herrenhausen. The minute flowers are white.—*Gard. Chron.*, Nov. 17, p. 592.

CATASETUM CHLORANTHUM, Cogn.—A Peruvian species introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it has flowered. It is allied to C. macrocarpum, and has pale green flowers, with some rosy spots on the petals, and a few obscure ones on the base of the sepals.—*Journ. des Orch.*, Nov. 1, p. 252.

CATASETUM PALLIDUM, Cogn.—A Columbian species, very nearly allied to C. Finetianum, L. Lind. and Cogn., but with shorter segments and some differences in the details of the lip. The flowers are whitish green. It also was introduced by Messrs. Linden.—*Journ. des Orch.*, Nov. 1, p. 252.

CYPRIPEDIUM × SIAMENSE.

A FEW years ago it was remarked that we had no undoubted natural hybrid in the genus Cypripedium, but shortly afterwards the remarkable C. Calceolus × macranthum came to light in the collection of M. W. Barbey, Chambesy, near Geneva, among importations of the two parent species from the birch forests of Siberia. And now I believe we have a tropical example, as the following evidence will show.

The other day Messrs. Hugh Low and Co., of Clapton, sent a flower of a Cypripedium which appeared in an importation of C. callosum, and another species (of which more anon) from Siam, which they considered might be a natural hybrid between them. I instantly recognised my C. siamense (*Gard. Chron.*, 1889, i. p. 192), which was described as a species, though the new evidence, accompanied by flowers of the supposed parents, throws an entirely new light on the question. C. siamense was imported by M. J. Garden, Bois Colombes, Paris, from the neighbourhood of Bangkok, and was described as a free growing species allied to C. javanicum. Then a plant appeared in the collection of G. H. Palmer, Esq., Springfield, Trowbridge, in August, 1890, and this, too, quite accidentally with C. callosum. Subsequently odd plants have flowered in other collections. It has been known since 1888, however, when Reichenbach described it as C. callosum var. sublæve (*Gard. Chron.*, 1888, i. p. 331), from a plant which flowered in the collection of R. H. Measures, Esq., The Woodlands, Streatham, which also came out of a batch of C. callosum. Curiously enough Reichenbach remarked—"It might be supposed to be a natural hybrid, but I do not believe it. . . . M. Regnier would have brought the other parent." I did not know this plant when describing C. siamense, but immediately recognised it on a subsequent visit to The Woodlands.

And now comes the evidence about the other Siam species. Some time ago a curious Cypripedium appeared in the collection of W. M. Appleton, Esq., of Weston-super-Mare, with a flower like C. Bullenianum, but the leaves scarcely at all tessellated. It was described as C. Bullenianum var. Appletonianum (*supra*, i. p. 135). It was supposed to have come with C. Hookeræ, and thus was presumably Bornean, like the original C. Bullenianum. It subsequently appeared in other collections, among plants of the typical form, and I am inclined to think that some of these, if not all, came from Siam. At all events, Messrs. Low have obtained plenty of it from thence, together with C. callosum, and some of the plants have the obscure tessellation of the variety Appletonianum. Thus we have evidence that C. Bullenianum comes from both Borneo and Siam, besides which it is also said to grow in Java, which, however, requires confirmation. The Siamese habitat explains all the mystery about C. siamense, which is absolutely intermediate between C. callosum and C. Bullenianum, and I think

is now proved to be a natural hybrid between them. The dorsal sepal is reflexed at the sides, as in the former, and has some purple nerves and a white margin, though it has the green disc and smaller size of the latter. The lip and staminode are also most like the latter, while the petals are quite intermediate, both in shape, colour, and spotting, the spots being smaller and more numerous than in C. callosum, and not confined to the upper margin. The discovery is a most interesting one.

R. A. ROLFE.

WILLOW ROOTS AS SUBSTITUTE FOR PEAT.

DEAR SIR,—As it may be of interest to your readers, I send you by post a sample of willow roots, which I have used for the past two years, in conjunction with sphagnum moss, for potting Orchids, with the greatest success; finding it superior to peat, fern root, or any other substance of like nature. I am not aware that it has been used previously, and it was only by chance that I discovered it. I have a number of willow trees whose roots find their way through the banks into a small stream, and for a number of years these roots have been regularly cut to prevent it choking the flow of the water. As my gardener was not satisfied with the peat he was able to obtain in the district, owing to its deficiency in fibre, I suggested he should try the willow roots, and now, after two years' trial, he is satisfied that no better substance could be obtained, as the Orchids have thriven in a way they never did previously. The advantages appear to be that perfect drainage is secured; that the fibre does not become sour or rot; and that the roots of the Orchids take to it most kindly, penetrate it, and grow freely, and show no symptoms of decay, although potted for a long time. It also seems to retain a sufficiency of moisture in conjunction with the sphagnum longer than other substances.

ALEXANDER ANNANDALE.

Bielside, Dunbar, N.B.

[The sample sent is good fibrous material, and we cannot see any reason why it should not answer the purpose pointed out. On being pulled to pieces when dry, a certain amount of fine soil—evidently dried mud—fell out, leaving the fibre clean. Probably this is discarded in potting. Those who have the material readily accessible should certainly try it. We should like to see a few selected plants, say of Odontoglossum crispum, potted in this material and grown side by side with others in polypodium fibre, and in good fibrous peat, under otherwise identical conditions for a couple of years, so as to test their relative values as potting materials for epiphytal Orchids. No doubt some of our readers will make the experiment and report results. —ED.]

CŒLOGYNE CRISTATA ALBA.

It may be interesting to note that at the sale of Mr. Lee's Orchids, at Leatherhead, I purchased a large plant of Cœlogyne cristata alba, which used to shrivel up to such a degree that I thought it would never recover. I had the plant divided and repotted, still with the same result. Last year it was again divided into six eight-inch pans, four of which were hung up close to the glass in the intermediate house, and the other two placed in their old position on the staging. Those which were hung up have scarcely shrivelled at all, and are now very fine fat bulbs and showing for bloom very well indeed, while those that are on the staging resemble Pharaoh's lean kine. *Ergo*, hang the plants near the glass, and they will do as well as the ordinary variety—that is my experience.

Arddarroch. R. BROOMAN WHITE.

CALENDAR OF OPERATIONS FOR JANUARY.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

IN commencing the Calendar of Operations for the present year, I desire to thank several correspondents for their kind and encouraging remarks, and to say that although in treating of cultural matters it will be necessary to travel over a good deal of old ground, I shall endeavour to introduce new matter as much as possible, so as to interest both new and old readers.

The following temperatures should be maintained during the present month :—

COOL HOUSE.—Day, 50° to 55°, with sun, 60°; night, 50°, morning, 45° to 50°.

CATTLEYA, INTERMEDIATE AND MEXICAN HOUSES.—Day, 60° to 65°, with sun, 68°; night, 58° to 60°; morning, 55° to 58°.

INDIAN HOUSE.—Day, 65° to 70°, with sun, 75°; night, 65°; morning, 60° to 65°.

The nearer these figures are maintained the better for the general welfare of the plants.

Let the plants in all departments have as much light as possible, for at this dull time, if they are too far away from the glass, they become drawn and weakly. The air can also circulate more freely round them when suspended or raised up on inverted flower-pots.

THE COOL HOUSE.—The principal work in this department will consist in keeping the plants clean, in providing a suitable temperature and atmosphere, and in very carefully watering the plants. To dislodge yellow thrip, which is perhaps the greatest enemy to Odontoglossums, working much havoc with the young growths, I have found no better remedy than Fowler's tobacco powder. I found this article so valuable that I always

carry it with me loose in my ticket pocket, and am so accustomed to take out a pinch between thumb and finger when any sign of thrip is noticed, that I often do it unthinkingly when in the company of visitors, whom I have observed look somewhat surprised. But it's not snuff—oh, dear no! simply tobacco powder, a rare preventative against thrip if used quite dry, and well dusted down in the axils of the young growths.

Water very carefully, especially plants in large pots, letting them get dry and remain so for several days before water is given. What is meant by dry is when the surface sphagnum moss looks white. Do not allow the atmosphere to become dry, but thoroughly damp the paths and walls once or twice a day according to the amount of fire heat used. Damping between the pots at this time of the year should be done with great caution, that is supposing they are standing on closed stages surfaced with shingle, but if the stages are open (the usual lattice wood-work) it may be done more thoroughly, for then the moisture dries up quickly—conditions under which the plants thrive best.

Ventilate as freely as the weather will permit; this work, however, will be mostly upon the bottom ventilators these cold winter months, and frequently it will be necessary to keep these closed. During mild weather the top ventilators may be opened, especially those on the leeward side.

Keep a sharp look-out for flower spikes as they appear, or the slugs may find them first. Tobacco powder dusted on the spikes will also deter slugs, which should be trapped and caught in cut potatoes, or carrots, or lettuce-leaves.

There are so many Orchids coming under the heading of intermediate, that it is customary in large establishments to provide several different departments for their accommodation. One is known as the Cattleya house, another as the Intermediate house, the occupants of which are usually of a miscellaneous character, and where nearly all genera are represented by a larger or smaller number of species, Oncidiums, Odontoglossums, Cœlogynes, Cymbidiums, Maxillarias, Lycastes, Epidendrums, and Cypripediums, predominating. Another very useful house is known as the Mexican house, which contains principally Orchids coming from that country. Perhaps the cultivator has a greater chance to meet with success when these various structures are at command; still, they are not absolutely necessary, for the whole may be grown quite successfully in one division coming under the head of intermediate. In the first place, the difference between the treatment of the occupants of the two first-named houses is indeed very trifling, and scarcely enough to mention; the Cattleyas, perhaps, liking a little more sunshine than the others, while the only difference required by the inmates of the Mexican house is that they must have a good deal of sunshine. Of course this can easily be managed by shading less at that part of the house where the latter are located. By the

above remarks the necessity for grouping will at once be seen. The miscellaneous Orchids should be given the most shady part, the Cattleyas coming next, while the Mexican house Orchids should have the greatest amount of light. It is remarkable how Orchids, many of which come from thousands of miles apart, will prosper under the came conditions.

In such a house as above described the difference at this time of the year between light and dark places is small indeed, and it is best to group the plants according to their state of growth. For instance, the Cattleyas and Lælias are mostly dormant, and should therefore be placed in the driest position, while such as the intermediate Cypripediums, Oncidiums, Odontoglossums, &c., many of which are never at rest, should be given the warmest and moistest positions. Of course there are exceptions which must be observed; Odontoglossum citrosmum, for instance, requires as much or more drought than the Lælias when resting, or it fails to flower. When speaking of resting Orchids one's remarks are sometimes so misunderstood, that the plants are kept so dry and shrivelled up as to very seriously injure them. To advise when and how often to water is a very difficult matter; but whatever is done never let a plant shrivel. Generally speaking, plants that are resting should be watered when the compost has looked dry for a few days, and is slightly crisp to the touch, while those that are growing should at this season be watered very moderately indeed. No repotting will be necessary in this house during this month. See that the atmosphere is kept moist and genial, as advised for the Cool house. Ventilate from the bottom at all times when the outside conditions will permit.

THE WARM OR EAST INDIAN HOUSE.—This house contains those species that require the greatest amount of warmth, such as Phalænopsis, Saccolabiums, Aërides, Angræcums, Phaius, many of the Vandas, Dendrobiums, and others. As in the other houses, a genial temperature must be kept up by means of damping down and by ventilating on all suitable occasions. The watering must also here be done with care, but on no account should this class of Orchids be allowed to suffer from drought, for, having no pseudobulbs, they soon suffer.

A start with the season's work of repotting and top-dressing may be made in this house by top-dressing or renewing the sphagnum moss to such species as Aërides and Saccolabiums. No peat need be used. Get ready a good supply of clean crocks, fresh sphagnum moss, neat sticks painted green, and some charcoal. In cases where the material was renewed last year, a top-dressing with fresh sphagnum will suffice. If the plants are in a good plump condition, and have healthy roots clinging to the crocks and sides of the pot, they need not be turned out. Simply remove the old moss and as many of the old crocks as possible, and carefully supply fresh. Should the plants, on the other hand, be unstable, or in a bad and shrivelled condition, it is best to lower the stems in new pots or teak-wood cylinders,

so that they have a new start, filling up the pots and covering the live roots, if any, with crocks and charcoal up to the rim, and surfacing over with sphagnum moss, afterwards keeping the surroundings nicely moist so as to encourage new growth.

Here is a good recipe for the production of a healthy feeding atmosphere for the month of January. Get ordinary bricks and place them on the hot-water pipes all round the house, the distance of a roofing-slate apart; then get the slates and let them rest upon the bricks, one single row lengthwise. Next collect a quantity of clean tree leaves (oak preferable) and lay as many of these as possible on the slates. Well wet them once a day when damping down, and note the resulting healthy aromatic smell, which, if coupled with sufficient fire heat to keep the proper temperature and no more, together with careful ventilation, is sure to have the desired effect.

If the spring-flowering Dendrobiums are in a good sound condition, having been properly grown and rested, the pseudobulbs should now be quite plump, and the flower-buds showing at the nodes down its greater part. A good batch of these may now be placed in intermediate temperature, and watered sparingly, or the buds may turn yellow or turn to growths. Prior to this trim off aged or useless pseudobulbs, leaving about three to each lead. If the variety is good these old bulbs may be propagated by cutting them in lengths of about three inches, and laying them on damp moss. I find it is a good plan to repot D. Wardianum now, before it is started for flowering. Once in about three years is often enough to do this. It is best grown in small baskets or hanging pans. Should any of the Dendrobiums be in a bad and debilitated condition, make no attempt to bloom them, but see that they are repotted in good compost—peat and sphagnum moss—in small pans, pots, or baskets, and started to grow in a gentle warmth of between 60° to 70°, watering very carefully until the young growths are nicely rooted.

Seedling Dendrobiums should also now be repotted and started to grow, in order that they may have a long season before them, when probably they will mature two growths. They are best potted in small pots, afterwards placing them in shallow teak-wood baskets suspended from the roof. When a number of those small pots are placed in a basket, it is best not to pack sphagnum moss between, or the air cannot circulate around them, which is of great importance.

The last month saw a large quantity of newly imported Orchids sold by auction, among them being that pretty little Cypripedium niveum. Broken limestone and fibrous loam is a good compost for this species and its allies. In order to avoid the damping off of the leaves see that the moisture does not lodge about them. A light position near the glass in a warm intermediate temperature suits them best. A quantity of C. spectablis was also sold, and this should be grown unprotected out of doors. If grown in pots

they should be plunged in a bed of leaves and never allowed to become dry. The protection even of a cold frame is not to be recommended. Among others I noticed Odontoglossum Reichenheimii, Cymbidium eburneum, Lælia harpophylla and L. pumila Dayana, all very pretty Intermediate house Orchids. The best way to establish these imported Orchids is to trim off all inert matter and prop them in an upright position on a moist stage. Moisten the old roots occasionally, but keep the water away from the leaves and bulbs. Soon new roots will begin to push forth, when they should be potted up, so that the roots enter at once into the compost. Oncidium varicosum, O. dasytyle, O. concolor, O. Marshallianum, and Odontoglossum crispum, are all Cool house Orchids, the Oncidiums all succeeding best if suspended near the glass. Lælia majalis, L. autumnalis, and Epidendrum nemorale are Mexican house kinds, and grow best exposed to strong light. Oncidium sarcodes and O. Cavendishianum are plants for the Warm house, and should be suspended with the warm Dendrobium. Cattleya intermedia should be grown warm during the winter. Cattleya citrina was also noticed, but this is an Orchid which we cannot grow well for more than two or three years in Birmingham. It is one of those kinds that delight in a clear atmosphere during winter, because it is then making its growth, and should on that account be kept rather warmer than intermediate. The brighter the skies the longer will this species last in good condition.

Speaking of auction sales reminds me of a question once asked, to this effect :—" Were they a means of increasing the popularity of Orchids, or the reverse ? " Having provincial sales in my mind, and after looking at all sides of the question, I come to the conclusion that they are more detrimental than otherwise. Purveyors to such sales doubtless in the long run stand in their own light. An Orchid not worth flowering, or one requiring many years of the most careful cultivation, should not be purchased. But how are new beginners to know that such is the case ? They hear but one side ; let me here give the other. It is possible to go to a sale and buy really serviceable plants at a moderate figure. The novice, however, not knowing their value, generally let these slip by, and is induced to buy at a trifling less cost plants that are practically worthless, on account of their being botanical curiosities, or small weakly stuff. " Well, let them pay for their experience." Just so ! but not too dearly, as this is just where the mistake is made. If it could be recorded how many promising amateurs had relinquished the cultivation of Orchids in the past owing to a false start, we should endeavour to avoid its occurrence in the future. I would recommend amateurs not to crowd their Orchid houses with worthless plants, that may never flower, even though they came cheap. Throw them away, and purchase at the proper cost sound, healthy stuff, guaranteed by the seller to flower in a reasonable time.

ORCHID PORTRAITS.

ANGRÆCUM FOURNIERIANUM.—*Rev. Hort.*, Dec. 16, p. 582, with plate.

BIFRENARIA TYRIANTHINA, Rchb. f.—*Lindenia*, t. 446.

CATTLEYA × HARDYANA VAR. LUCIANI.—*Lindenia*, t. 449.

CATTLEYA MOSSIÆ VAR. WAGENERI.—*Lindenia*, t. 445.

CYPRIPEDIUM × CANHAMIÆ (abnormal).—*Gard. Chron.*, Dec. 1, p. 667, fig. 86.

CYPRIPEDIUM × METEOR.—*Journ. of Hort.*, Dec. 13, p. 535, fig. 84. A fine form of C. × Charles Richman.

CYPRIPEDIUM × SANDERIANO-SUPERBIENS.—*Wien. Ill. Gart.-Zeit.*, Nov., pp. 421, 422, fig. 64.

CYPRIPEDIUM × WILLIAM LLOYD.—*Journ. of Hort.*, Dec. 20, p. 557, fig. 91; *Gard. Chron.*, Dec. 22, p. 757, fig. 97.

EPILÆLIA × HARDYANA.—*Gard. Chron.*, Nov. 24, p. 629, fig. 80.

ERIA CINNABARINA, Rolfe.—*Lindenia*, t. 448.

ERYCINA ECHINATA, Lindl.—*Bot. Mag.*, t. 7389.

EULOPHIELLA ELISABETHÆ, L. Lind. and Rolfe.—*Bot. Mag.*, t. 7387.

LÆLIO-CATTLEYA × DECIA.—*Gard. Chron.*, Dec. 8, p. 699, fig. 89.

LÆLIO-CATTLEYA × LINDENI.—*Lindenia*, t. 447. This is a form of Lælio-cattleya × elegans.

MASDEVALLIA ROSEA, Lindl.—*Gard. Chron.*, Dec. 1, p. 657, fig. 83.

ODONTOGLOSSUM NEBULOSUM VAR. AMABILE.—*Lindenia*, t. 450.

ONCIDIUM CRISTATUM, Rolfe.—*Lindenia*, t. 451.

PHAIO-CALANTHE × SEDENIANA.—*Journ. of Hort.*, Dec. 6, pp. 512, 513, fig. 80.

SERRASTYLIS MODESTA, Rolfe.—*Gard. Chron.*, Dec. 15, p. 727, fig. 91.

THUNIA WINNIANA, Hort.—*Lindenia*, t. 452.

VANDA AMESIANA.—*Journ. of Hort.*, Nov. 29, p. 491, fig. 74.

BELGIAN NOTES.

BY CH. DE BOSSCHERE.

AT the last meeting at Gand, M. Jules Hye-Leysen exhibited a series of interesting and beautiful hybrid Cypripediums, under the names of C. × Nicias, C. × delicatum, C. × Romelus, C. × Augusta, and C. × Hebe, the latter derived from C. Spicerianum and C. × Sallieri.

At the meeting of the Orchidéene, of Brussels, many fine Orchids were shown. A First-class Certificate of Merit was awarded to Odontoglossum crispum antverpiense, exhibited by MM. Janssens and Vincent, of Antwerp, a large and admirably-spotted form. M. Ch. Van Wambeke exhibited Lycaste costata, Oncidium cucullatum, and Cattleya labiata in excellent

condition, a Cultural Certificate being awarded to each. The interesting and beautiful Chondrorhyncha Chestertoni was shown by M. de Lansberge, and the curious and rare Lælia Lindleyana by M. A. Wincqz. Various other showy Cattleyas, Cypripediums, &c., were also sent from different collections.

The striking Cattleya labiata Peetersii, described in the last volume of the ORCHID REVIEW, is again flowering in the establishment of M. Peeters, of Brussels, and this year its beautiful striped flowers are, if anything, better than before.

A very remarkable Catasetum has just flowered in the houses of L'Horticulture Internationale, for which the name of C. imperiale has been proposed. It bears a raceme of about a dozen flowers and buds, the ground colour being white, with the greater part of the expanded lip rich purple-crimson, and the petals barred with the same colour.

The Société Royale d'Agriculture et de Botanique de Gand has published the programme of its 161st exhibition, which will be held in April next. Twenty-five classes are set apart for Orchids, which are open to all amateurs and nurserymen.

Among the decorations in the Horticultural section of the Exposition Universelle d'Anvers may be mentioned the *Ordre de Léopold* conferred on the M. Florent Pauwels, of Antwerp, a nurseryman who cultivates Orchids with success, M. Jules Closon, proprietor of the firm Jacob Makoy et Cie., and your Belgian correspondent.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

AT the meeting of the Royal Horticultural Society held at the Drill Hall, James Street, Westminster, on November 27th, there was a good display of Orchids, and many interesting things were shown.

Baron Sir H. Schöder, The Dell, Egham (gr. Mr. Ballantine), sent Phaio-calanthe × Sedeniana, a fine hybrid, raised by Messrs. Veitch from Phaius grandifolius ♀ and Calanthe × Veitchii ♂, to which a First-class Certificate was given; and Cypripedium insigne Sanderianum with nine flowers and buds, which received an Award of Merit. The latter is a fine yellow form which was figured at page 145 of our first volume.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent a fine group of hybrid Calanthes, one called C. × Harold receiving an Award of Merit. It has bright rose-carmine flowers. The others were C. × Sibyl, blush white, C. × Bryan, white with rich purple eye, C. × Kenneth, white with rose centre, and C. × Wm. Murray, white with rosy tip and a purple centre.

M. Jules Hye-Leysen, Coupure, Gand, received an Award of Merit for Cypripedium × triumphans, a beautiful hybrid which was described at page 316 of our first volume. He also sent C. × Madame Marguerite Hye, a very pretty hybrid derived from C. Spicerianum ♀ and C. × Sallieri Hyeanum ♂, and Odontoglossum × macrospilum, Rchb. f., a very pretty form of O. × Wilckeanum with light ground.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent Odontoglossum Insleayi splendens and O. I. aureum, the latter being a pretty unspotted form to which an Award of Merit was given.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), received an Award of Merit for Cypripedium × Lucienianum superbum, a handsome variety of C. nitens. He also sent the fine C. × Leeanum giganteum.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), received a Botanical Certificate for Serrastylis modesta, Rolfe (*supra* ii. p. 170), a remarkable new genus from the Andes, recently described from the collection of Sir Trevor Lawrence.

J. F. Alcock, Esq., Northchurch, Berkhamsted, sent a very fine variety of Oncidium Forbesii.

Hamar Bass, Esq., Byrkley, Burton-on-Trent (gr. Mr. Hamilton), sent the fine specimen of the true Cattleya × Victoria-Regina noted at p. 353 of our last volume.

Earl Cowper, Panshanger, Herts (gr. Mr. Fitt), sent Calanthe × Exquisite (C. × vestita luteo-oculata × Turneri), a pretty white form with a little primrose and pink in the throat.

H. Grinling, Esq., Harrow Weald (gr. Mr. Rapley), showed Calanthe vestita luteo-oculata.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford), sent flowers of Cattleya × Marstersoniæ, Lælio-cattleya × Tydea, Odontoglossum × mulus, Hardy's var., and forms of Lælia anceps.

S. G. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. Paterson), sent Cypripedium tonsum, C. insigne Lutwychianum, very similar to C. i. Ernestianum, but the spots more distinct, and Lycaste Skinneri amœna.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), exhibited Cypripedium insigne Richardii, a fine form with flat round dorsal sepal and very numerous spots, and C. × Zeus, a very pretty hybrid derived from C. callosum ♀ and C. ciliolare ♂, with prettily spotted rose-purple flowers.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), sent a brightly coloured Cypripedium called C. × Dauthieri superbum, whose parentage was described as C. × Harrisianum × villosum; and C. × Smeeanum, a hybrid of doubtful parentage, though the shape, spotted petals and dark median band of the dorsal sepal suggest the combination of C. Argus with C. × Lathamianum (C. Spicerianum × villosum).

H. Tate, jun., Esq., Allerton Beeches, Liverpool, sent a very curious flower of Cypripedium insigne in which the lower sepal was an exact reproduction of the dorsal one, in shape, colour, and spotting. A note stated that a second flower on the plant was exactly similar.

W. J. Thompson, Esq., Walton Grange, Stone, Staff. (gr. Mr. Stevens), exhibited a fine specimen of the true Cattleya × Victoria-Regina, and the rare Odontoglossum præstans, a distinct and pretty Peruvian species.

Mr. J. F. Wilkinson, The Gardens, Highlands, Minchin Hampton, staged a group of five well-flowered specimens of Cypripedium insigne, for which a Vote of Thanks was accorded.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, received a First-class Certificate for Lælio-cattleya × Decia, a fine hybrid from Lælia Perrinii ♀ and Cattleya Dowiana aurea ♂. They also sent Habenaria carnea nivosa and Cypripedium × Milo, a very pretty hybrid derived from C. insigne Chantinii ♀ and C. × œnanthum superbum ♂.

Messrs. F. Sander and Co., St. Albans, staged a good group, including several rare varieties. It contained a series of forms of the beautiful Dendrobium Phalænopsis, Lælia præstans, the pretty and distinct Selenipedium Sargentianum (described at page 239 of our first volume), the singular Catasetam Christyanum, a fine white Odontoglossum crispum, Cœlogyne Gardneriana, the graceful little Epidendrum Laucheanum, Rolfe, Calanthe × Sandhurstiana, and others. A good plant of the curious Brazilian Pleurothallis strupifolia received a Botanical Certificate. The group also included two very pretty hybrid Cypripediums—C × Doncasterianum, derived from C. hirsutissimum ♀ and C. callosum ♂, and bearing much resemblance to C. × porphyrochamys (*supra*, vol. i. p. 105, fig. 7), and C. mulus (*l. c.*, p. 244); and C. × J. Bartels (C. Boxallii ♀ × C. callosum ♂), a form with spotted petals, allied to C. × apiculatum (C. barbatum ♀ × C. Boxallii ♂).

Messrs. Hugh Low and Co., Clapton, exhibited a very effective group, to which a Silver Banksian Medal was given. It contained some good forms of Cattleya labiata, Lælio-cattleya × Schilleriana, Vanda cœrulea, Angræcum sesquipedale, Oncidium Lanceanum, and about nine plants of Cypripedium Charlesworthii, one of them bearing a two-flowered scape.

Mr. P. Mc Arthur, Maida Vale, also received a Silver Banksian Medal for an effective group, including Cattleya labiata, Catasetum Bungerothii aureum, Cœlogyne speciosa, Lælia præstans, Oncidium Gravesianum, Epidendrum cochleatum, Cypripedium tonsum, C. Chamberlainianum macranthum, and C. insigne aureum, a very pretty form with the ground colour almost coppery yellow, but spotted in the usual way.

M. A. A. Peeters, Saint Gilles, Brussels, received an Award of Merit for a fine plant of the handsome Cattleya labiata Peetersii, a bizarre form described at p. 78 of our last volume, which is evidently constant in character.

Mr. P. Weathers, Silverhall Nursery, Isleworth, exhibited Cattleya labiata Weathersiana, a very pretty blush-white form.

Messrs. B. S. Williams and Son, Upper Holloway, staged a neat and interesting group of good things, which received a Vote of Thanks. It included the handsome Pescatorea Lehmanni, Odontoglossum blandum, Oncidium cheirophorum, Phaio-calanthe × Sedeniana rosea, Cœlogyne Gardneriana, Selenipedium reticulatum, and Cypripedium × Harrisianum superbum.

The exhibits on December 13th, the last meeting of the year, showed a considerable falling off in point of numbers, though a number of good and interesting things were staged.

Baron Sir H. Schöder, The Dell, Egham (gr. Mr. Ballantine), sent a magnificent spike of Cymbidium Tracyanum.

The Right Hon. Lord Rothschild, Tring Park (gr. Mr. Hill), received an Award of Merit for a splendid form of Cattleya amethystoglossa, under the name of C. guttata Prinzii Vicomte de Figuirado.

The Duke of Westminster, Eaton Hall, Chester, sent flowers of Cattleya labiata Princess Adolphus, a very richly coloured form.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), received an Award of Merit for Lælia × Euterpe (L. crispa × L. pumila Dayana). He also sent Lælio-cattleya × Tresederiana, Cypripedium × Ariadne, and the pale C. × Leeanum albens.

T. W. Swinburne, Esq., Corndean Hall, Winchcombe, received an Award of Merit for the handsome Cypripedium × Swinburnei magnificum, with dark spotted petals.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), also received an Award of Merit for Cypripedium × Swinburnei magnificum.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), exhibited Vanda Bensoni anchorifera and Bulbophyllum mandibulare, the latter receiving a Botanical Certificate.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howe), showed Cypripedium × J. Howe (C. × Sallieri × C. villosum aureum), a handsome form approaching C. × Sallieri Hyeanum.

S. G. Lutwyche, Esq., Beckenham (gr. Mr. Paterson), sent a fine form of Dendrobium Phalænopsis, D. × endocharis, Cypripedium insigne, C. Curtisii, and C. Dayanum.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent Platyclinis uncata, Masdevallia velifera, and M. peristeria, the latter receiving a Botanical Certificate.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), showed Amblostoma tridactylum and a light form of Cypripedium × Ashburtoniæ.

W. C. Walker, Esq., Winchmore Hill (gr. Mr. Cragg), sent the rare Eulophia megistophylla.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, exhibited Epidendrum Wallisio-ciliare, a very interesting hybrid derived from E. ciliare ♀ and E. Wallisii ♂; Cypripedium × Zeno (C. × nitens ♀ × C. insigne Chantinii ♂); C. × Sirius (C. barbatum Warneri ♀ × C. Godefroyæ ♂), a pretty variety of C. × J. Gurney Fowler, figured at p. 361 of our last volume; C. × Minos, and a fine variety of C. × Niobe.

Messrs. F. Sander and Co., St. Albans, staged a nice group of interesting things, including forms of Dendrobium Phalænopsis, Lælia autumnalis alba, L. a. atrorubens, L. furfuracea, the rare Stenia pallida, Cattleya Walkeriana, Catasetum Christyanum, Cypripedium × Hollidayanum (C. concolor ♀ × C. × almum ♂), C. × maculatum (C. tonsum ♀ × C. × Leeanum ♂), C. × Albert Truffaut (C. × Harrisianum vivicans ♀ × C. Spicerianum ♂), C. × J. Bartels, C. × Priorianum, C. × radiosum superbum, &c.

Messrs. Hugh Low and Co., Clapton, staged a neat group, including several Cypripedium Charlesworthii, C. × Leeanum superbum, C. Argus-Spicerianum, and other Cypripediums, Lælia præstans, and Schomburgkia rhionodora var. Kimballiana, a rare plant, with purple flowers, to which an Award of Merit was given.

Mr. P. Weathers, Silverhall Nursery, Isleworth, received an Award of Merit for Cypripedium × William Lloyd (C. × bellatulum ♀ × C. × Swanianum ♂), a richly coloured and handsome hybrid. He also showed C. × Gravesiæ, originally described and figured at p. 81 of our last volume.

Messrs. B. S. Williams and Son, Upper Holloway, staged a good group, including Lælia anceps Williamsii, L. autumnalis atrorubens, Cœlia bella, Oncidium Forbesii, O. prætextum, O. cheirophorum, a fine plant of Cypripedium × Sallieri, with about twenty flowers, C. × Pitcherianum Williams' variety, C. × meirax, C. × Leeanum, &c., a Vote of Thanks being given.

Messrs. Heath and Son, Cheltenham, showed Lælia-cattleya × Tresederiana pallida, with the front lobe of the lip light rose-pink.

CORRESPONDENCE, &c.

H. J. R., Florence. Dendrobium fimbriatum, typical.

W. M. A., Weston-super-Mare. Dendrobium cretaceum roseum.

We have received the illustrated Catalogue of Messrs. Siebrecht and Wadley, New York, containing among other things a good selection of the more popular cultivated Orchids.

ERRATA.

By a slip the figure of Cypripedium × J. Gurney Fowler in our last issue was given as "Fig. 18." It should be corrected to Fig. 34.

Subscriptions for 1895 are now due.

ol. III.] FEBRUARY, 1895. [No. 26.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

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NOTES.

THE first meeting of the year of the Royal Horticultural Society was a very successful one considering the season, as will be seen by the Report on another page. The next meeting will be held at the Drill Hall, James Street, Westminster, on February 12th, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

An enumeration of African Orchids appears in a work entitled *Conspectus Floræ Africæ*, by M. Durand and Dr. Hans Schinz, of which the fifth (or first) volume has recently been issued.

The November number of the *Kew Bulletin* contains another Decade of New Orchids described by Mr. Rolfe, of which particulars will be found on another page.

A paper on the double flower of Epidendrum vitellinum from the collection of G. C. Raphael, Esq., of Englefield Green, by Mr. C. H. Wright, appears in the recent issue of the *Annals of Botany*, together with an analytical plate.

An exhibition of Orchids and other plants, as we learn from the *Bristol Mercury*, was organised by the District Secretaries of the Gardener's Orphan Fund and the Gardener's Royal Benevolent Institution, and held in the large showrooms of Messrs. James Crispin and Sons, Nelson Street, Bristol, on January 15th, 16th, and 17th, the proceeds being entirely devoted to these two worthy national institutions. A large number of Orchids from the collection of Mr. James Crispin, F.R.H.S., of Fishponds, were exhibited.

Lycaste Skinneri is a most effective winter-flowering Orchid when well grown. A fine and well-developed flower is sent by Mr. T. Archer, gardener to R. le Doux, Esq., Marlfield, West Derby, Liverpool. The plant has one leading bulb with ten flowers. It is an excellent example of good culture.

Vanilla cultivation in Mauritius, which has hitherto been one of the staple products of the island, is, according to the *Chemist and Druggist*, rapidly diminishing, and will soon be a thing of the past. The cause has been put down to the continued robbery of the Vanilla estates by the Indian immigrants, but the real reason is the increasing competition of the Vanilla grown in Bourbon, which, owing to the soil being more suited to its cultivation, can be produced there at a cheaper rate. The planters also complain that the fluctuations in prices per kilo render the article a very speculative one.

Odontoglossum crispum, Hunter's variety (Kränzlin in *Gard. Chron.*, 1893, i. p. 194), of which we have received photographs and living flowers from H. J. Hunter, Esq., of Edinburgh, is a very charming form, the sepals and petals being much spotted with cinnamon-brown, as in O. × Horsmanii. It has much improved.

Lælia anceps, Rosefield variety, according to a flower received from De Barri Crawshay, Esq., of Sevenoaks, is a handsome rose-coloured form, in which the veinings in the throat are very broad and dark, giving it a very striking appearance. L. a. Crawshayana is a giant form with unusually broad petals and brilliant colours, which secured a First-class Certificate at the Drill Hall on January 15th last.

Vanilla tolypephora, named in allusion to the ball of wool on the lip, is a Malayan species recently described by Mr. Ridley (*Trans. Linn. Soc.*, ser. 2, iii. p. 376), which had previously been confused with V. albida. The flowers are said to be as beautiful as any in the genus, and the fruits, like small bananas, are sweet and eatable.

Fogs in the early part of January did some damage to Orchid flowers in the London district, and we have received flowers and buds of Cypripediums, both from Camberwell and Streatham, showing its disastrous effects.

Several species of Ophrys are now flowering in the collection of H. J. Elwes, Esq., Andoversford, Gloucestershire, and we have received flowers of O. aranifera, O. Speculum and O. lutea. The lip of the first is remarkably like a spider, and the second has a smooth shining centre, well compared to a looking-glass. All three, in fact, are very happily named.

DIES ORCHIDIANÆ.

I WAS very glad to see an account of some of the principal varieties of Cattleya labiata and Cypripedium insigne in the last two numbers of the ORCHID REVIEW, as such enumerations are extremely useful, and it inspires one with the hope that other popular species may be taken in hand, some of which badly need it. Just a year ago I suggested Lælia anceps as a very suitable subject for such a review, and although now perhaps too late for the present season I hope it will not be overlooked on some future occasion. A multitude of varieties have been named, and I have a shrewd suspicion that one or two of the recent ones have been dealt with before. In this, however, Lælia anceps is not by any means singular, for the same may be said of several other popular Orchids, Cypripedium insigne not excepted, unless my memory is sadly at fault. It is highly desirable that the more distinct varieties should receive distinguishing names, but an unnecessary increase of synonymy should be avoided. I shall certainly hope to see the ORCHID REVIEW do something in this direction.

Some time ago I alluded to the increased brilliancy of our collections during the dull season, owing to the introduction of three or four autumn-flowering species in quantity, and the increasing number of hybrids of the same class. A glance through the houses at the present time serves to emphasise the latter point. Here is a wealth of bloom for which we are entirely indebted to the hybridist, of which Calanthe × Veitchii, perhaps, stands first and foremost with its glorious racemes of lovely pink flowers. And it has some equally charming descendants, indeed some of them are decided improvements, and foreshadow a race of florist's varieties in this beautiful group. Then we have a swarm of varieties of Cypripedium × Leeanum, a plant which flowered for the first time as recently as 1884, C. × nitens and its varieties, C. × Niobe, and C. × Buchanianum must also be included, as well as several Dendrobiums just commencing to flower. Other forms of recent appearance promise to be equally popular when they become better known, so that one wonders if there will be a dull season at all in a few years' time.

A note appeared at p. 39 of the last volume respecting Bulbophyllum auricomum, which was described as a very pretty little plant, with gracefully arching racemes of highly fragrant flowers, and a great favourite with the Burmese girls, who wear it in their hair. The other day I had the good fortune to stumble across a plant of this charming little Orchid, and can fully endorse what was said about it. It cannot be known to many people or it would surely be more common. Its pendulous racemes are as graceful

as those of a Platyclinis, and the milk-white flowers with deep yellow lip have a pleasing fragrance like new-mown hay. Placed on a block in the warm house, it grows almost like a weed, losing its leaves in the autumn—for it is deciduous—and soon afterwards pushing up its racemes in quantity. These qualities, added to its habit of flowering just in the dead of winter, should secure for it a place in collections where it is yet unknown.

The lengthening days remind me that the season of renewed activity is again at hand. Already species of Phalænopsis, Cattleya Trianæ, the polymorphic Odontoglossom × Andersonianum, and numerous Dendrobiums are out, while others are coming on apace. Ere my next notes appear we shall have fairly commenced the busy season, when some interesting developments may be anticipated.

ARGUS.

CYPRIPEDIUM × BUCHANIANUM MAGNIFICUM.

The original Cypripedium × Buchanianum is a charming little hybrid which was raised by Mr. T. Osborne, gardener to the late H. J. Buchan, Esq., Wilton House, Southampton, from C. Druryi ♀ and C. Spicerianum ♂, and flowered for the first time in December, 1887. The reverse cross has been raised and has now flowered in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, and is so much finer as to merit the above name. Comparing the two flowers sent, we note that the new variety has a far larger dorsal sepal, reaching two inches and three-eighths broad, the petals an inch broad near the apex, and the lip correspondingly larger and lighter in colour, while the staminode, on the other hand, is a line narrower, more folded behind, and the margin and disc white with a small green tubercle in the centre. In each case the characters of C. Spicerianum preponderate, though traces of yellow in the flower and a dark band down the petals show the influence of C. Druryi. The new variety is a very decided improvement, and a useful addition to the winter flowering group.

NOVELTIES.

BULBOPHYLLUM PTERIPHILUM, Rolfe.—A very distinct species, which flowered at Kew in September last, in clumps of the remarkable fern, Lecanopteris carnosa, whose rhizomes are tenanted by ants. It was sent by Mr. C. Curtis, of the Forest Department, Penang. The small white flowers are borne in racemes.—*Kew Bulletin*, 1894, p. 391.

LANIUM BERKELEYI, Rolfe.—The third known species of this curious little genus, and a native of Brazil. It was found by Major-Gen. E. S. Berkeley in a clump of Cattleya guttata, and flowered in June, 1891, being afterwards imported by Messrs. F. Sander and Co. The flowers are small, and light green, with numerous minute red-brown dots on the sepals, petals, and base of the column.—*Kew Bulletin*, 1894, p. 392.

EPIDENDRUM PFAVII, Rolfe.—A stately Costa Rican species, of which dried specimens and coloured drawings were sent to Kew by Mr. Richard Pfau. It is allied to the Brazilian E. Cooperianum, and grows from four to six feet high, the flowers being pinkish purple with a white disc to the lip, and borne in numerous racemes at the summit.—*Kew Bulletin*, 1894, p. 392.

POLYSTACHYA VILLOSA, Rolfe.—A very distinct and interesting little plant, native of the Upper Zambesi, which flowered with Mr. J. O'Brien in September, 1890, and recently with M. A. Van Imschoot, of Gand. It has a softly villose inflorescence of pale whitish green flowers, resembling some species of sphagnum in colour. The lip is white, with a light yellow line on the basal half, and some minute purple spots on the disc.—*Kew Bulletin*, 1894, p. 393.

CHONDRORHYNCHA BICOLOR, Rolfe.—An interesting species described from materials sent by Mr. Richard Pfau from Costa Rica. It has the habit of a Warscewiczella, and bears largish white flowers with some purple markings on the middle and base of the lip.—*Kew Bulletin*, 1894, p. 393.

CATASETUM LEMOSII, Rolfe.—A Brazilian species given by Dr. Lemos, Superintendent of Schools for the province of Pará, to E. S. Rand, Esq., of the same place, in whose collection it flowered recently. It also flowered in the collection of M. Robinow, Esq., of Didsbury, in May, 1892. The sepals and petals are brownish flesh colour, ultimately becoming tawny yellow, and the lip light-green with some yellow inside. It is the C. roseum of Rodriguez, but has been re-named because there is an older species of the same name.—*Kew Bulletin*, 1894, p. 394.

CATASETUM RANDII, Rolfe.—A very interesting little plant, which also flowered in the collection of E. S. Rand, Esq., of Pará. Its affinity is with C. Garnettianum, Rolfe, a sort of miniature edition of the well-known C. barbatum, but in its short, brush-like crest is unlike any other. Flowers of both sexes were produced, being wholly dissimilar in structure, the females apple-green in colour, with fleshy, erect, hood-shaped lip, but the males irregularly dotted with purple-brown on a green ground, and with much fringed pendulous lip. A living plant has also been sent to Kew.—*Kew Bulletin*, 1894, p. 394.

ORNITHIDIUM NANUM, Rolfe.—A small West Indian species which was sent to Kew by Mr. Wilke, of the Rotterdam Botanical Garden, and flowered in the collection in September last. The flowers are yellowish white, and not unlike those of Dendrobium crumenatum in shape.—*Kew Bulletin*, 1894, p. 395.

TRICHOCENTRUM HARTII, Rolfe.—A Venezuelan species which was sent to Kew by J. H. Hart, Esq., F.L.S., Superintendent of the Trinidad Botanic Garden. It also flowered with Sir Trevor Lawrence in September, 1892, having been obtained from Messrs. Linden. It is allied to T. fuscum, Lindl., but has a curved spur shorter than the lip.—*Kew Bulletin*, 1894, p. 395.

SARCOCHILUS CRASSIFOLIUS, Rolfe.—A species of unknown origin which flowered in the collection of M. A. Van Imschoot, Gand, last October. It is a climbing species with flattened stem, allied to the Javan S. anceps, Rchb. f., and bears yellowish white flowers, with the front lobe of the lip yellow and an orange blotch behind the crest.—*Kew Bulletin*, 1894, p. 396.

SACCOLABIUM × BELLINO-BIGIBBUM.

Natural hybrids among Orchids are becoming rather numerous, and presumably may occur wherever nearly-allied species grow intermixed. Vanda and Catasetum have recently been added to the list of genera in which they occur, and now Saccolabium may also be included. In October, 1893, a curious little Saccolabium flowered at Glasnevin, under the charge of Mr. F. W. Moore, A.L.S., which had been obtained as S. bigibbum, though in some respects it was almost as much like S. bellinum, another Burmese species, well known in gardens. Careful comparison revealed the fact that it combined the characters of both species, as hybrids invariably do, and on inquiry I learn that in Burma the two are found together. The hybrid has the habit and foliage almost of S. bellinum, but much smaller flowers—in fact, they are about intermediate in size between those of the two species. The lip is rather small, and resembles S. bigibbum in shape rather than the other species. The sepals and petals are deep red-brown, yellowish at the extreme margin, the petals having a very narrow yellow line in the middle. The lip is white, spotted with purple, the base of the sac yellow spotted with brown, and the column carmine. It is a very interesting and pretty little plant, and its hybrid origin seems to be conclusively proved by the facts above pointed out.

R. A. ROLFE.

CYMBIDIUM NIPPONICUM.

This is a very interesting leafless Japanese Cymbidium whose identity has not previously been made out, as it is the Bletia nipponica of Franchet and Savatier (*Enum. Pl. Jap.*, ii. p. 511). The inspection of an authentic specimen, however, shows it to be a Cymbidium, and an intimate ally of the Himalayan C. macrorhizon, Lindl. (*Gen. and Sp. Orch. Pl.*, p. 162), which both Mr. C. B. Clarke and Gustav Mann record as being a true parasite, though they do not say upon the roots of what particular plant it grows. Thus it would appear that there is little chance of seeing either of these two species in cultivation. Its authors make no mention of its parasitic habits, though they state that it occurs in open mountain woods in the island of Nippon, and compare it with the North American Bletia aphylla, Nutt., a plant now removed from Bletia, and known as Hexalectris aphylla, Raf. They also describe the flowers as yellow. Its Japanese name is *Mayaran*. The branched scaly rhizomes and leafless habit of these two species gives them a very different aspect from that of an ordinary Cymbidium, yet the flowers have precisely the structure of that genus, and thus they constitute a very peculiar little group.

R. A. Rolfe.

NOTICES OF BOOKS.

In the Guiana Forest: Studies of Nature in relation to the Struggle for Life. By James Rodway, F.L.S. 8vo, pp. 242, with 16 illustrations. With an Introduction by Grant Allen. London, T. Fisher Unwin, Paternoster Square.

Our readers have already made the acquaintance of Mr. James Rodway, whose interesting account of the fertilisation of Coryanthes was reproduced in our last volume, and some of them will probably like to extend the acquaintance through the pages of the above-named work. Its title is descriptive, and the author has not only the gift of observation, but also a picturesqueness of style which, as Mr. Grant Allen observes in his Introduction, fairly entitle him to be called a Jeffrey of the tropics. The work recalls Belt's *Naturalist in Nicaragua* in style, but is entirely devoted to the forest and its inhabitants, animate and inanimate, with the fierce struggle for existence that is continually going on. The sixteen illustrations which embellish the work are reproductions from photographs, and convey to the reader a graphic idea of some of the more characteristic scenes, one of which by the kindness of the publisher is here reproduced.

The above will suffice to show the general character of the work, and

we now pass along to the subject which more immediately concerns us, namely, the Orchids, references to which are both numerous and extremely interesting, more especially as it pictures them in all their natural surroundings. For example:—"In the savannah rises a great eta palm, perhaps sixty feet high, its mass of roots standing above the water as a mound, from whence proceed the rough but bare stem to a height of fifty feet, where the great dome of fan-shaped leaves crowns its apex. . . . Below the crown stand the remains of a hundred clasping leaf-stalks of different ages, their axils filled with decaying vegetable matter, in which revel the roots of that unique Orchid, Catasetum longifolium. With ribbon-like, flexible leaves streaming downwards and great flower-spikes slightly bent outwards to greet the sunlight, this plant also appears to have no rivals."

An account of the habitat of Oncidium altissimum is extremely graphic:—"One day we had an experience at a creek which set us a-thinking. We were collecting Orchids, and up in a tree overhanging the water was lodged a great clump of Oncidium altissimum, its long graceful flower-stems loaded with yellow butterfly-like blossoms hanging over in every direction. It was a magnificent plant, fully four feet thick, with panicles rising to a height of twelve feet. It is needless to say we wanted it for our collection, and that we sent one of our boatmen to fetch it down as carefully as possible. This, however, was easier said than done, for, first it was attached to the tree, then it was threaded with a number of bush-ropes, and finally more or less entangled in a crowd of branches. Taking a cutlass, the negro climbed up to its level and began to chop at the obstruction, but almost immediately came down with a run, rubbing his hands and face and picking a swarm of ants from his clothes. Looking up we could see that the attack on the plant had brought out its garrison, which blackened every leaf and flower-stem, and made the negro descend in such hot haste." For half an hour the spoilers were kept at bay before the plant was thrown into the stream, after which came the work of getting rid of the virulent insects by pushing the mass under water with a long bamboo, when myriads of ants, several cockroaches, and a large centipede were dislodged and carried in black patches down the stream. On the fork of a tree the Orchid had found a congenial habitat, where it grew and flourished for years, developing a great mass of roots to be occupied by the immense horde of ants, who in return for house accommodation, undertook to keep off the enemies of the Orchid, of which the cockroach was one of the most inveterate. Some of the cockroaches were present, but had not yet been captured, and it is not to be supposed that even this omnivorous insect will be deterred from attempting to get a delicious meal simply because its enemies are to the fore. Is not this one of the reasons why the ants are so ready to take up their abode among the Orchid roots? Where its food was to be found the cockroach would certainly come, and the ant as certainly find its prey.

After speaking of Schomburgkia and Diacrium, which provide homes for ants in their hollow pseudobulbs, Mr. Rodway proceeds:—"Another and quite distinct harbour for an ant garrison is that of the Coryanthes. There are several species, all of which appear to grow in the same manner, attached to bush-ropes rather than perched on limbs of trees. This

Fig. 2. CORYANTHES MACRANTHA AT HOME.

is so obviously suited to their peculiar manner of growth that it is quite conceivable the plants may have been first carried up from the sand by the tightening of the stem of a creeper, as a growing tree carries its mass of foliage higher and higher. Otherwise, we might fancy they pushed off from a branch, and being caught as they fell to make themselves at home under new conditions. However this may have been, the fact remains that the

plant is now entirely suited to its habitat, and flourishes to perfection in places where few other Orchids succeed in establishing themselves. Instead of a hollow pseudobulb, the Coryanthes provides an oval mass of fibrous roots, as distinct from those so well known in the other Orchids as their object is different. In the Coryanthes the ants establish themselves, filling up the interstices to make a waterproof nest, whence they are ready to issue on the least alarm of an enemy. Being carnivorous they can do the plant no harm, but, on the contrary, are so useful that without them it suffers from cockroaches and other pests. This is easily proved by specimens brought to our gardens, where, on account of the collectors having removed their useful tenants by soaking them in water, they are particularly subject to the attacks of insects and rarely thrive for any length of time." The fertilisation of this Orchid is not less marvellous than its manner of growth, but as it was given in detail at p. 338 of our last volume it need not be repeated here.

The scarcity of female as compared with male flowers of Catasetum is well known, in connection with which the following note is suggestive:— "In some species of Catasetum there are male and female flowers quite distinct in appearance the one from the other, and what is most curious, borne on the same plant at different times. It appears as if the Orchid is able to choose whichever of these it is able to bring to perfection. The male necessarily requires a less continuous strain, as it is saved from the labour of ripening the capsules, which takes several months. When, therefore, the plant is comparatively weak, only male flowers are produced, but when the pseudobulbs are plump and strong, females."

These extracts serve to show the character of the work generally, for the numerous other subjects are treated in an equally pleasing style. In short, the work is a worthy companion to the writings of Wallace, Bates, Belt, and others who have so graphically depicted for us the wonders of tropical nature. An Index would have been a decided improvement.

Cypripediums. By R. I. Measures, Cambridge Lodge, Flodden Road, S.E. Third edition, pp. 62. Published by the Author.

This handy little booklet contains an alphabetical list of species, varieties, and hybrids of Cypripedium, with the parentage of the latter. The Preface states:—"Care has been taken to include all species and most hybrids, with their registered parentage, that are in cultivation up to date. There are many hybrids under two or more names, and others that have not been registered." In the case of hybrids the raiser is also given, while species have the native country added. Species not in cultivation are, however, included, and in some cases the known habitats omitted, as C. Chica and C. debile. C. palmifolium, too, is from Guiana, not "Choco." We also note one or two names without any information, as C. Diadem

and C. De Cockianum, and in neither case is there anything to show whether species or hybrids are intended. These might have been omitted, and in any case C. bulbosum should not have been included, as it is only a synonym of Calypso borealis. These are very slight defects, but might have been avoided had some expert spent a few minutes in glancing through the list. It is a very compact little book, interleaved throughout for additions, and handsomely bound in Russian leather.

Mr. Measures does not wish to make any profit from the sale of the book, but is desirous of benefiting two very worthy institutions. He is therefore adding two shillings per copy to the cost price, one shilling of which will go to the Gardener's Benevolent Institution and one to the Gardener's Orphan Fund, and if the edition is sold out both will reap a substantial benefit. The price is 3s. 6d. per copy, or 3s. 8d. if sent by post.

CATASETUM × SPLENDENS.

Three forms of this interesting natural hybrid have flowered with Messrs. B. S. Williams and Son, Victoria and Paradise Nurseries, Upper Holloway, none of them quite identical with those previously recorded. The first has the size and shape of C. × s. viride, the lip being expanded, one and three-quarter inches broad, and with a well-developed crest. The colour is light yellow throughout, and thus it marks the transition to C. × s. auratiacum. A second approaches C. × s. flavescens, the mouth of the lip being one and one-eighth inches broad and the sides nearly parallel, except at the somewhat reflexed minutely denticulate margin, and the crest well developed. The colour is almost that of the preceding, but the sepals and petals slightly greener with many minute brown dots, and the lip a little deeper yellow with a trace of green within the sac. The third has the lip almost of C. × s. O'Brieniana, or a sort of enlarged and somewhat expanded C. macrocarpum, but the crest quite obsolete, and the colour ivory-white, very faintly tinged with pale green, the sac deep yellow at the base, and a number of minute purple dots on the disc of the petals. This form is remarkable for combining the colour of C. Bungerothii with a near approach to the shape of C. macrocarpum. They are very interesting and beautiful and help to confirm the results previously arrived at. The amount of variation is remarkable, and is no doubt partly accounted for by the great dissimilarity of the two parent species.

R. A. R.

I observe in the pages of a Belgian contemporary an attack upon Mr. Rolfe respecting his article on Catasetum × splendens, in which he is accused of dogmatic assurance, and a pretence to infallibility. It is also

insinuated that it was impossible for him to form any opinion of a plant whose description was not published until afterwards. Every careful reader of Mr. Rolfe's article must have seen that he had ample material on which to form an opinion, for he evidently saw the plants at the Royal Horticultural Society, and he carefully explained the basis of his decision. I venture to assert that no one is better qualified to judge, for he has made the subject of natural hybrids entirely his own, and many of my fellow Orchidists will join me in thanking him for his most instructive and interesting essays on this fascinating subject, and in expressing the hope that he will persevere in his efforts to reduce these difficult plants to an intelligible system. Mr. Rolfe has always shown himself willing to acknowledge mistakes, and when a man to whom Orchidists are so much indebted is thus unworthily attacked it is quite time to utter a word of protest.

W. L.

[The article our correspondent alludes to does not contain an atom of evidence that the plants are not what they were represented to be in these pages, and therefore calls for no further comment. M. Cogniaux also expresses the opinion that C. × splendens is a natural hybrid between the two species in question, a conclusion which it was shown Messrs. Low had also previously arrived at. And it would be observed that the names under which the plants were exhibited were stated in each case, so that Mr. Rolfe assumes responsibility for the others. It is also within our knowledge that the article was only extended, and to some extent re-written, on account of Messrs. Linden's exhibit, while M. Cogniaux's name was adopted in preference to another for the same reason. We have also received letters to the same effect from Belgium and Italy.—Ed.

OUR ILLUSTRATIONS.

Several notes respecting our illustrations have recently come to hand, and we are pleased to learn that they are giving so much satisfaction. As is well known, they are reproduced by a process which preserves the original photograph in all its fidelity, so that the different organs, and the details of light and shade come out in correct proportions. In illustrations of this kind the fanciful tastes of the artist have no room for play; what is pictured is what is seen in the original, the details being reproduced without omission or exaggeration—a method of illustration which all who desire to see the characters of their plants faithfully portrayed will appreciate. Would that an equally exact method of reproducing colours could be devised. What a revolution in the character of our illustrations it would effect!

MEXICAN HYBRID LÆLIAS.

THE Mexican Lælias, which brighten up our Orchid houses so effectually during the autumn and winter months, have during the last few years received some notable additions, whose relation to older forms has in some cases been the subject of dispute. That some were of hybrid origin has long been supposed, though the possibility of their being distinct species, or in some cases mere varieties has also found expression. For a long time I have had them under observation, with a view to clearing up the mystery surrounding them, and at length hope to have reduced them to something like order.

There appears to me to be five distinct species in the Mexican highlands, which in certain localities grow two or more together and not infrequently become cross-fertilised by the insects which visit the flowers. These are L. anceps, L. albida, L. autumnalis, L. furfuracea, and L. grandiflora (majalis). Of these albida, furfuracea, and grandiflora appear to reach a higher elevation than the other two. Six other intermediate forms occur, which are clearly of hybrid origin, namely—L. × Finckeniana, L. × Gouldiana, L. × Crawshayana, L. × leucoptera, L. × Eyermaniana, and L. × venusta. These facts are shown in the following diagram :—

L. anceps. . .		
	× . . .	1. L. × Finckeniana.
L. albida. . .	× . .	2. L. × Gouldiana.
	× . .	3. L. × Crawshayana.
L. autumnalis .	× . .	4. L. × leucoptera.
	. × .	5. L. × Eyermaniana.
L. furfuracea . .		
	× . . .	6. L. × venusta.
L. grandiflora . (L. majalis)		

This diagram is very instructive. If my conclusions are correct—and I believe they are warranted by the facts—Lælia albida has been crossed with all the four species with which it grows; L. anceps with L. albida and L. autumnalis; L. autumnalis with L. albida and L. anceps; L. furfuracea with L. albida and L. grandiflora; and L. grandiflora with L. albida and L. furfuracea; or a total of six out of ten possible combinations. The four not known are L. autumnalis and L. anceps each with L. furfuracea and L. grandiflora. For the explanation of the diagram it may be advisable to remark that diagonal lines are supposed to extend from each of the species on the left, and that each point of intersection represents a possible cross. The hybrids are represented in the right-hand column. We may now proceed to consider them in detail.

1. L. × FINCKENIANA.—This is a very distinct and beautiful plant

which flowered in the collection of C. W. Fincken, Esq., Hoyland Hall, Barnsley, in December, 1892, having been obtained as an unflowered plant from the Liverpool Horticultural Company. It appeared in an importation of L. anceps, and at present is unique. It shows such an unmistakable combination of the characters of L. albida and a white L. anceps that I entertain no doubt whatever as to its origin. It was described and figured at page 9 of the last volume, where full details are given.

2. L. × GOULDIANA, Rchb. f.—A richly coloured and very beautiful plant which appeared in 1887, both with Messrs. Siebrecht and Wadley, of New York, and Messrs. F. Sander and Co., St. Albans. Reichenbach remarked that if it was a hybrid one might think of L. autumnalis and L. anceps as the probable parents. He also suggested that it might be a species, or a variety of L. × Crawshayana. In January, 1890, a plant flowered in the collection of H. W. Nixon, Esq., of Leek, in a clump of imported white L. anceps, and in the following December another in the collection of M. Jewell, Esq., of Bexley, which was at once thought to be a hybrid between L. anceps and L. autumnalis. The origin of this plant has been the subject of some dispute, but after consideration of all the facts I believe that the combination of characters of L. autumnalis and L. anceps, which it undoubtedly presents, proves it to be a natural hybrid between them. It also was figured on the same page of this work as L. × Finckeniana.

3. L. × CRAWSHAYANA, Rchb. f.—This beautiful plant appeared as long ago as 1883, and, if not the oldest of the group, was, at least, the first suspected to be of hybrid origin. It flowered in the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks. After pointing out certain resemblances to L. albida, autumnalis and anceps, Reichenbach observed, "I thought of a hybrid between L. anceps and L. autumnalis, but its possessor prefers to think of L. albida Stobartiana and L. anceps." One or two plants afterwards appeared with Messrs. F. Sander and Co., St. Albans, and one with Sir Charles Strickland, Bart., Hildenley, Malton, which are evidently of similar origin, though not quite so fine as the original one. The parentage of this hybrid has also been the subject of dispute, but both Mr. Crawshay and myself are now agreed that it is derived from L. albida and L. autumnalis, whose characters it combines, both in the flowers and vegetative organs. The original piece was found with L. albida, and the one last mentioned with L. autumnalis.

4. L. × LEUCOPTERA, Rolfe.—This appeared with M. A. A. Peeters, of Saint Gilles, Brussels, in 1884, and was described by Reichenbach as L. × Crawshayana var. leucoptera. But it presents so many differences from the original type that I have long been convinced of its distinct origin, and accordingly separated it. I at first thought it was derived from L. autumnalis and L. albida, which, in turn, helped to obscure the real origin of the two preceding hybrids. But on carefully going over the ground again, and

comparing it with all the possible parents, I discovered what I believe explains the difficulty. It is not the characters of L. autumnalis that are represented, but of the allied though quite distinct L. furfuracea. The broad petals, and trace of mealiness on the keels, as well as the fewer flowers and general aspects of the plant are precisely those of a cross between L. furfuracea and L. albida, from which I believe it was derived. It is very rare.

5. L. × EYERMANIANA, Rchb. f.—We now have to deal with a very interesting form which appeared with Messrs. F. Sander and Co., St. Albans, in 1888. It flowered out of an importation of L. grandiflora (majalis), which it closely resembles in its vegetative organs. L. autumnalis was said to have been seen in the same place, and these two were suggested as the probable parents. In September, 1890, it flowered in a clump of the former species in the collection of F. Wigan, Esq., Clare Lawn, East Sheen, its presence being previously unsuspected. Another appeared with G. le Doux, Esq., East Molesey, about the same time, while a month later one flowered with Signor R. Mercatelli, of Florence, this time being labelled L. albida. Mr. James Crispin, of Bristol, also flowered a plant during the same autumn. In 1893 Messrs. Fred Horsman and Co., Colchester, secured some plants, one of which flowered with Sir William Marriott, after whom it was provisionally named. A number were sold and passed into several collections, but ultimately proved not to be distinct. Some were said to resemble L. albida crosses, but all to have the blood of L. majalis, with which they appeared. On examining a number of plants, some of which flowered at Kew, I find the most unmistakable evidence of a descent from L. majalis and L. albida. The plants vary somewhat, as hybrids generally do, but are evidently forms of one and the same hybrid.

6. L. VENUSTA.—The one remaining form which I include here is a rare and beautiful one. It appeared with Messrs. James Backhouse and Sons, of York, and was described as L. autumnalis var. venusta, Rchb. f. The plant was acquired by W. Lee, Esq., of Leatherhead, but a second piece passed into the collection of the late A. Wilson, Esq., Westbrook, Sheffield. A few years ago a similar form appeared with A. Sillem, Esq., Laurie Park, Sydenham. Then came a plant, which Reichenbach suggested might be a hybrid between L. autumnalis and L. furfuracea, called L. autumnalis var. xanthotropis, Rchb. f., which flowered with Messrs. F. Sander and Co., St. Albans, whose origin appears to be the same. The influence of L. furfuracea is apparent enough, but I believe that L. majalis was the second parent. The resemblances to it and to the preceding hybrid are too great to be overlooked, while the few larger flowers and general aspect of the plant are more in agreement. The suggested relationship to L. autumnalis must I think be abandoned.

It will be seen that one or two new ideas are brought out in the above,

particularly with regard to hybrids from L. furfuracea and L. grandiflora, but I believe they are warranted by the facts. The absence of hybrids from both L. anceps and L. autumnalis with L. furfuracea and L. grandiflora is perhaps accounted for by different altitudes at which they occur.

R. A. ROLFE.

MASDEVALLIA ORTGIESIANA.

The Royal Botanic Gardens, Glasnevin, have long been famous for a collection of Masdevallias, which is one of the most complete in existence, Mr. F. W. Moore, the curator, having for many years lost no opportunity of extending it. Consequently it contains many rarities which are only to be found in a very few other collections where these charming little plants find special favour. The above species is one of these rarities which is now flowering there. It belongs to the section Coriaceæ, and is the next ally to M. striatella, Rchb. f., though the tube of the sepals is shorter and broader. The leaves are linear-oblong and about four inches long, the slender single-flowered scapes being considerably shorter. The flowers are five lines long, and pale greenish white with three faint purple nerves on each sepal. There are no distinct tails, but the sepals are gradually narrowed to the apex. There are also three light purple nerves on the lip, which is papillose in front. It is a very interesting little plant.

R. A. R.

ODONTOGLOSSUM × ANDERSONIANUM PULVEREUM.

The wide range of variation in colour and marking of Odontoglossum × Andersonianum has already been considered in detail in these pages (vol. i. p. 170), and the difficulty of distinguishing its different forms, owing to the way they grade into each other, pointed out. It is becoming increasingly evident that the only practical way of dealing with these glorioso-crispum forms is to treat them as varieties of the original O. × Andersonianum, for the lines of demarcation between them are being gradually filled up by the appearance of intermediate forms. A brilliantly coloured and handsome form has appeared in the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, which comes nearest to the variety Leeanum (O. × Leeanum, Rchb. f.). It has flowers of a very bright clear yellow, with very numerous small cinnamon-brown spots on the lower half of the sepals and petals, and a few similar ones on the lip, with a small blotch in front of the crest. Leeanum, as seen in the published figure (*Orchid Album*, iii., t. 101), has deeper coloured flowers, with the sepals and petals somewhat suffused with orange-buff towards the margins, and the spots extending almost to the tips, while the blotch on the lip is larger.

DENDROBIUM HILDEBRANDII.

THE subject of our present figure is a very distinct and striking novelty which was collected in the Shan States by H. H. Hildebrand, Esq., who sent it to Messrs. Hugh Low and Co., of Clapton, in whose establishment it flowered for the first time in the early months of last year, when the accompanying photograph was taken, and forwarded to us. It was

Fig. 3. DENDROBIUM HILDEBRANDII.

described as Dendrobium Hildebrandii, Rolfe (*Kew Bulletin*, 1894, p. 198), as was recorded at p. 189 of our last volume. The general habit is that of a strong D. signatum, the flowers being light yellow, with the sepals and petals twisted, much as in D. tortile—a character well shown in the illustration. It is a plant of very robust habit, and exceedingly floriferous, as Mr. Hildebrand states that it grows in magnificent huge masses, and that as many as fifteen hundred flowers have been counted on a single clump. The flowers are also somewhat variable in colour, some forms having a deeper yellow throat and a pair of maroon spots at the base, while in

others they are absent. So vigorous and floriferous a plant is likely to be quickly taken in hand by the hybridist, when it may be expected to yield some distinct and beautiful forms. It is a decided acquisition to the group.

THE HYBRIDIST.

CYPRIPEDIUM × LOUISÆ.

THIS is a large and very pretty hybrid which has recently flowered in the collection of R. le Doux, Esq., Marlfield, West Derby, though, unfortunately, there is a little doubt about its parentage. It has a rounded dorsal sepal over two inches broad, with rows of purple-brown dots at the base and centre, the nerves at the side being light purple, and the margin white. The petals are two and a half inches long by three-quarters of an inch broad, suffused with purple, the veins slightly darker, and a few small brown spots near the base. The lip is much like C. insigne, but rather more purple in front, and the staminode has the characteristic tubercle of that species. It is much larger than C. × Ashburtoniæ, to which it bears a considerable resemblance. A similar form has also flowered in the collection of W. Vanner, Esq., Camden Wood, Chislehurst, possibly from the same parentage — a brightly coloured and equally attractive form. A cross between C. × Leeanum and C. × Ashburtoniæ should yield such a hybrid, as the parentage would then be C. insigne $\frac{1}{2}$, C. barbatum $\frac{1}{4}$, and C. Spicerianum $\frac{1}{4}$. The two former are easily traced, and the influence of the latter would account for the white margin of the dorsal sepal, and also for the fact that the median purple band extends to the apex, though it is much narrower than in C. × Leeanum. It is not C. × Leonæ (insigne Chantini ♀ × callosum ♂), and this increases the probability of the C. × Leeanum parentage, and accounts for the preponderance of C. insigne characters. The doubtful point will probably be solved before long by the flowering of a hybrid known to have originated from this particular cross.

CYPRIPEDIUM × HENRY GRAVES.

A fine hybrid derived from C. Lawrenceanum ♀ and C. × Marshallianum ♂, and somewhat resembling a large C. bellatulum. The leaves are oval-oblong, light green with deep green hieroglyphic markings, and the scape eight to twelve inches high and 1- to 2-flowered. The flowers expand over four inches, and the dorsal sepal is concave, broadly ovate, pale greenish yellow, suffused with vinous purple near the margin, reticulated with pale green, and occasionally dotted with chocolate-purple. The petals are oblong, ciliate, suffused with vinous purple over the entire surface, spotted with chocolate-purple, and obscurely veined with light green. The lip is oval, slightly compressed, green-yellow, suffused with vinous brown in front, the small

infolded lobes dotted with chocolate-purple. The staminode is semilunar, notched above, pale whitish yellow, suffused with vinous purple and reticulated with green. So far as I know this is the first hybrid in which the concolor blood has been carried into the second generation, and the quantity of that species shown in the present hybrid is marvellous. Several plants of it are in flower in the rich collection of Henry Graves, Esq., Orange, New Jersey. The name is given in compliment to his son.

R. M. GREY.

SPOT ON ORCHID LEAVES.

ENQUIRIES are frequently made respecting the cause of the disease of Orchids known as "spot," which disfigures the leaves and spoils their appearance, also the best remedy to apply, consequently a few notes on the subject will doubtless prove acceptable. That it is a disease of the tissues is well known, though its origin is not always so apparent. In some cases it is undoubtedly caused by microscopic parasitic fungi, but in others the tissues are seen in unhealthy condition without any trace of their presence. How far appearances can be relied upon in these cases is perhaps doubtful, as comparatively little is yet known upon the subject, and some have sought to account for the appearance of spot through the atmosphere being kept too moist and the house insufficiently ventilated, without reference to fungi at all.

Disease on cultivated Orchids, however, may result from several different causes, one of which is the parasitic fungus known as Cladosporium Orchidearum, which attacks the leaves of Phalænopsis and various other genera, sometimes doing much damage. It originates thus :—An excessively minute spore settles on the surface of a healthy leaf, and begins to germinate by pushing out a slender filament, called the mycelium, which enters the leaf through the stomata, or organs of transpiration, and runs about between the cells, completely disorganising them, though apparently not piercing their walls. As the intercellular spaces become filled with a mass of mycelia, the damage becomes apparent on the surface of the leaf in discoloured patches, which ultimately present a semi-rotten appearance. For some time the fungus grows entirely within the tissues of the leaf, but when it reaches maturity it again emerges, and produces fruiting tufts, or threads, which are sparingly branched, and bear pale olivaceous, usually septate spores, and these, of course, give rise to a new generation of fungi.

The Vanilla disease, which recently proved so destructive in the Seychelles, is another parasitic fungus, known as Calospora Vanillæ, which has, fortunately, not yet troubled us here, but it is well to be on our guard, for it is recorded to have been cultivated through all its

stages, on Dendrobium and Oncidium, in the Laboratory at Kew, by Mr. Massee, so that if once introduced it might prove troublesome. In the Seychelles it caused much damage, hundreds of pods damping off, doubtless through their food supply being cut off owing to the damage to the leaves caused by the fungus. The fungus grows much in the same way as the preceding, the spores germinating and entering the tissues through the stomata, and there producing a mass of mycelia in great abundance under the epidermis. About the time that the leaf is killed the fungus enters a new stage. The mycelia cross, lateral branches are given off, which become closely entangled and eventually form a small colourless cushion, which bulges up the cuticle and bursts through, producing pale yellow agglutinated masses of gonidia on the upper surface of the leaf. At a later stage these gonidia produce perithecia containing spores, which completes the life history of the organism. Formerly these three stages were considered to represent distinct fungi, belonging to different genera, and the two latter were supposed to be saprophytes, only living upon decaying matter when the first had done the mischief. This idea is embodied in the most recent articles on the subject, but, as we have seen, is erroneous. In fact, the second and third are practically the flowering and fruiting stages of the fungus.

A few words must be said as to preventative measures, and here we see the importance of knowing the life history and habits of the enemy. Instead of the disease being caused by some fungus which propagates itself nobody knows how, and being followed by some harmless saprophytes, these innocents are seen to be the very root of the mischief. Extirpate them, root and branch; burn every fragment as soon as found, and the disease will cease from troubling. These very measures have proved effectual in checking the Vanilla disease in the Seychelles. Again, it was on a piece of damp, insufficiently drained land that it originally appeared, and this is also suggestive. Keep the houses properly ventilated, and avoid a too moist stagnant atmosphere, and thus check its development by hygienic means. There may be cases where a weak solution of sulphate of copper could be used with advantage, but the former remedies will probably prove effectual.

Very little is yet known of the fungi which affect Orchids, and some of these if introduced might give little trouble, though one can never become surety for their good behaviour. The Vanilla disease was probably introduced from America, where it has been observed, but nothing seems to be known of the native country of Cladosporium Orchidearum. It is desirable, however, that these blanks should be filled up, and examples of fungi on leaves of Orchids, either wild or cultivated, would be useful as a means of extending our knowledge of the subject.

CULTURE OF DENDROBIUMS.

MR. JAMES CYPHER, of the Queen's Road Nursery, Cheltenham, is well known to be one of our most successful cultivators of Dendrobiums, and the following notes of a paper read by him before the Birmingham and Midland Counties Gardeners' Mutual Improvement Association will doubtless prove acceptable to our readers, as they embody the method of culture followed by an acknowledged expert :—

In the successful cultivation of Dendrobiums there are several important points which must be strictly adhered to, especially the use of small pots, pans or baskets in which to grow them, as many growers fail through having too much material about the roots. Plenty of heat and moisture should be given during the growing season, and the plants must be kept perfectly clean and free from insect pests, especially thrip and red spider, both of which are very destructive, and soon disfigure and weaken the young growths. During hot weather, the plants should be thoroughly syringed twice daily, taking care to get at the under side of the leaves, where the insects usually attack them.

The best compost I have found to consist of good fibrous peat and fresh sphagnum, in equal parts, with a liberal addition of broken crocks and charcoal, and the soil should in most cases be renewed annually, as the roots will not enter sour material. Good drainage must always be given, and new clean pots or pans, using them as small as possible, according to the size of the plants. I generally use pans in preference to baskets, as they are easily broken when the plants require shifting, but it is almost impossible to get plants out of baskets without injuring many of the tender roots, while if the old basket is placed inside a new one, the old compost becomes exhausted.

Galvanised wire should never be used for suspending the choice varieties, as the growths are frequently injured by contact with it. I have several times noticed bulbs of Dendrobiums almost ruined by contact with the wires during hot sunshine. If the roof wires on which the plants are suspended be galvanised, they should receive two coats of white paint.

A constant supply of rain-water is another very important matter, as the plants will not thrive if frequently watered with hard water. In all Orchid houses provision should be made for storing all the rain-water possible, and if in large open tanks so much the better. The water used for dipping should be of about the same temperature as the house in which the plants are grown, and this can be secured by having a small tank over the hot-water pipes, which should be kept filled. I do not care to have hot pipes constantly running through the large tanks. In dipping the plants great care should be exercised, especially during winter and early spring, when the young growths are starting, or they may be broken or damaged. They

should never be plunged beyond the base of the plant, and the tender young breaks should not be allowed to touch the water.

The Dendrobium house should also be provided with trough pipes, and these should be kept filled during the growing season, and should occasionally have a little manure-water and soot placed in them, taking care, however, that they never become dry, or the foliage may be injured. The floor of the house should also be sprinkled with manure-water twice a week during the summer months, the best time being when the house is closed for the night.

Another important matter is to secure plenty of light, as Dendrobiums enjoy all the light possible and a little sunshine, morning and evening, though they should be shaded from hot sun during the day. Many people say that Dendrobiums grow so well at Cheltenham because we have so much sunshine, but not many weeks ago I saw a few Dendrobes at Stand Hall, near Manchester, and I can truly say I never saw better grown plants, and Manchester is not blessed with any great amount of sunshine. There are also some splendidly grown plants in the collection of Mr. Lee, at Manchester, and at Highbury and The Uplands, in Birmingham. No doubt they must receive less shade near any large town, and cultivators must use their own discretion, always striving to give the plants all the light possible, and a little sunshine. Never use a permanent shade, or allow the blinds to remain down during dull periods.

After repotting, the plants require more shade for a week or two; also great care in watering until the roots take hold of the new soil, after which a liberal supply should be given until the growths are matured, when it should be gradually reduced, so as to mature the growths, and in autumn sufficient moisture only should be given to prevent shrivelling. I strongly advise giving plants water immediately they show signs of shrivelling, as I have no doubt they are sometimes weakened and almost killed by too much drought in winter.

I also advise wintering the choice hybrids in a fairly warm house, never falling below 55°. Such varieties as D. Bensoniæ, aureum, lituiflorum, and all the Australian and New Guinea Dendrobes, should never be placed in a cool house, but must be kept warm and dry during the resting period. The Australian ones when retaining their foliage always make better and stronger growths than if allowed to lose their leaves.

D. Dearei should never be kept dry nor placed in a cool house, as it appears to grow and flower all the year round, and should therefore be kept moist. D. formosum requires plenty of heat and moisture during the growing season, and well repays the grower by producing its splendid blooms during autumn, when white Orchids are scarce. D. infundibulum and Jamesianum should be grown cool and moist during summer, and in autumn placed at the cool end of the Cattleya house, and kept moist, in order to mature their growths, when they produce flower buds in the spring.

D. Bensoniæ is considered a very difficult plant to cultivate for many years, but I have grown it for eight years and at the end of that period had finer bulbs than those imported. I believe many or nearly all are lost by having too much water during winter or early spring, and even when the new growths are several inches long they should receive very little water. Red spider also has a particular fancy for it, and soon injures the young growths, if not kept in check, which should be done by sponging the under side of the leaves with weak Fir-tree oil and water.

D. Falconeri is also subject to the attacks of red spider, and should be carefully watched. I find it grows best when kept rather cool and shaded during summer, and well saturated with water. More light should be given in autumn, to mature the growths, and during the winter it should be kept dry, to induce it to bloom freely. It is no doubt one of the handsomest Dendrobes when in bloom, and well repays any care bestowed on its cultivation.

No doubt the nobile section is the easiest to cultivate, and all are beautiful when in bloom, especially D. nobile nobilius, D. n. Cooksoni, D. n. pendulum, D. n. Hardyanum, D. n. Cypheri, &c.

It is not necessary to have a house specially devoted to Dendrobes, as any one having a warm plant-stove may cultivate many varieties to perfection. I have often noticed better specimens in ordinary plant-stoves than in a mixed house of warm Orchids, or in houses specially devoted to Dendrobiums; and they produce a beautiful effect, hanging in bloom from the roof of any plant-stove.

CYPRIPEDIUM POYNTZIANUM.

A flower from the type plant of the above in the collection of Reginald Young, Esq., Sefton Park, Liverpool, sets at rest the doubtful point as to its identity (*supra*, ii. p. 54). It is the Siamese form of C. Bullenianum mentioned last month (p. 20), whose history was previously so obscure. As the geographical representative of the Bornean C. Bullenianum it is a very interesting plant, and it is rather singular that the two should be so much alike in the flower, yet so dissimilar in foliage. The original type has the leaves very handsomely tessellated, while the Siamese variety Appletonianum has the markings obscure and sometimes nearly obliterated. One cannot help thinking that it is something more than a mere coincidence that in each geographical area the foliage should so much resemble that of the species with which it grows—in Borneo C. Hookeræ, and in Siam C. callosum—but facts have not yet come to light which would warrant the suggestion that it is a case of mimicry or protective resemblance.

R. A. R.

ARE STELIS FLOWERS IRRITABLE?

About seventy-five years ago, when figuring the Jamaican Stelis ophioglossoides in their *Botanical Cabinet* (vol. v. t. 442), Messrs. Loddiges remarked:—"It is a minute and curious plant; its flowers last a long while, during the months of August and September; they open and shut at various times, and that so suddenly, that we found considerable difficulty in making our drawing, attempting it several times, when they closed directly, as soon as removed or touched." The statement has been repeated on various occasions, though so far as I know without confirmation, and I have never been able to detect anything of the kind among the various species in cultivation. Mr. George Syme published some interesting observations on the two Jamaican species, in 1880 (*Gard. Chron.*, 1880, ii. p. 819), which are here reproduced :—

"The flowers of S. ophioglossoides and S. micrantha, both natives of the higher mountains of Jamaica, though not irritable, are sensitive in a somewhat passive degree, inasmuch as their opening and closing is entirely regulated by the density of the enveloping atmosphere. Under cultivation in the garden here at a few hundred feet above sea level during dry, sunny days, their flowers are persistently closed; but should the sky become clouded with a tendency to rain they immediately relax, and should rain fall they are shortly in full blossom. It is quite different with them at night. The nights here are generally damp and dewy, and the flowers of our two Orchids open with the falling of the dew a dusk, and close again at sunrise or shortly after, when the dew is evaporated. I have shut up flowering plants of both species in a box during the day to ascertain what effect the darkness or absence of light might have on the movements of the flowers, but at the close of three hours the deltoid sepals were still closed. Thus, here they might be styled night-blooming, and they virtually are so; but they are far removed from home and the associated conditions of life to which they have so very long been educated. Naturally they affect the trees in dark, shady forests, at elevations of from 4,000 to 7,000 feet, where they are almost continually enveloped in fog or pelted with torrents of rain, and consequently at the proper season their flowers are almost constantly open by day as well as night."

My own observations point in the same direction, though with some differences in detail, for the various species in cultivation do not all behave in the same way, though they all close at some time of the day. For example, a green flowered and a purple flowered species will stand side by side in the same house, and one will have the flowers open but the other closed at a certain time of day, while later the conditions may be reversed. My impression is that the opening and closing of the flowers is entirely

connected with the habits of the insects which fertilise them, opening when they are on the wing, and closing at other times, as a protection against marauders. If this is the case, it would appear that some are fertilised by day-flying, and others by night-flying insects, and that the colour of the flowers is connected with their time of opening. The object of this note is to draw attention to the question, for several species are in cultivation, and observations on their time of opening and closing, together with the conditions of the light, temperature, and moisture of the atmosphere would be extremely interesting. Though not showy, the flowers of this large and widely diffused Tropical American genus are certainly very highly specialised, and one would like to know more about their economy.

R. A. ROLFE.

CALENDAR OF OPERATIONS FOR FEBRUARY.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

ALLOW the temperatures for this month to remain as advised for last, with the exception of a few degrees rise by sun-heat as it gains in power. Between solar heat and that from the hot-water pipes there is indeed a great difference, and those growers who are so placed as to get the greatest amount of the former during the dull winter months should undoubtedly pass through the trying ordeal with the least number of plants debilitated or prostrate. I notice a good many of our Mexican Orchids, and others that are known to grow naturally in great light, are this year suffering to some extent by a greater loss of foliage. The cause of this I, rightly or wrongly, attribute to the fact that owing to the comparatively sunless summer of last year the leaves become somewhat sappy or unripened, and thus rendered unable to successfully withstand the—so far as smoky, sulphurous fogs are concerned—exceptional winter. I notice, likewise, the greater power of those plants which have recently been imported — say within the last three or four years—to resist these evil influences of large cities on plant life, and this I take as supporting the above theory. And, further, is it not the same thing, with a difference, when we read of an Orchid growing luxuriantly under what is generally considered to be the wrong treatment? Our attention is sometimes called to cases of this description, as, for example, a hot Orchid growing well in a cool house, or *vice versâ*. But are we quite satisfied that such treatment will be permanently good, or do we not rush into print a little too hastily and incur the chances of innocently misleading our readers? The latter, in my opinion, is frequently done. I admit, as before stated, that pure air and clear skies have a powerful influence upon many Orchids, but we must not forget that the aspect and general conditions of one cool house may be quite different

from those of another. The cool house of one might more closely resemble the intermediate house of another, or the reverse. Under those circumstances contributors, when recommending a treatment differing from that generally adopted, should be careful to give details as to aspect and temperature, and to describe as nearly as possible the position the plants occupy, and above all to be very careful to state how long they have been imported. This last item is undoubtedly the greatest cue for an Orchid grower to follow. When an Orchid continues to flourish and to increase in size after about three years of cultivation in a certain house, that is proof sufficient that it is in the right place.

In all departments the work will consist very much as advised for last month. It is yet too early to commence potting on a large scale. Simply keep a nice growing temperature and ventilate and water the plants carefully, spending all spare time in cleaning and freeing the plants as much as possible from the parasites which infest them, for soon there will be but little time to spare in this direction. If thrip or aphis abound it may be necessary to fumigate as well as to use tobacco powder. I use at intervals, more as a preventative than to kill, "Campbell's rolls" or "Richardson's fumigating insecticide," according to directions issued, and find them both very serviceable. For sponging plants it is better to use clear water, and do it frequently, rather than to use any of the many insecticides advertised, but in desperate cases, where insecticides are employed, care must be taken not to injure the plants by applying it too strong, using it in quantities rather under than over the directions given, always well drying it out from the young tender growths.

What little re-potting or top-dressing can be done this month will be in the East Indian house, and Vandas, Angræcums, Phalænopses, &c., may be supplied with fresh sphagnum moss. It is best to carefully pick out from between the roots the old sphagnum moss, together with any loose crocks and charcoal, carefully replenishing with clean and fresh materials. It is not advisable to use peat for these Orchids. They should afterwards be placed in the warmest part of the house and given a moderate supply of water. Many of the Cypripediums, too, may now be re-potted when necessary, and that is when the pots are full of roots. Do not pot in too large pots and drain about one half full with crocks.

Cypripediums like a compost of good lumpy peat and chopped sphagnum moss in equal parts, intermixed with a few finely broken crocks or charcoal. After re-potting keep the plants in a moist, warm, and genial temperature to encourage growth, keeping the compost itself moderately moist only until the roots have taken hold, Cypripediums flower better in small pots than in large ones. I often think that many species and hybrids of this popular genus are grown too hot; such as C. insigne, C. Spicerianum, C. villosum, C. Boxallii, C. venustum, C. barbatum, and C. Fairiea-

num, with their hybrids, may all be grown quite successfully in the intermediate house, also Selenipedium Schlimii and hybrids derived from it. I do not advocate the Odontoglossum house generally for them, although I have seen some of them do well enough there, preferring to be on the safe side, and I do not by any means recommend the following figures, although there is no doubt in my mind that many Cypripediums will endure more cold than many of the proper cool Orchids.

A correspondent assures me that he has the following either in flower or in bud. C. × Harrisianum, C. hirsutissimum, C. insigne albomarginatum, C. Spicerianum, C. villosum, and Selenipedium × Sedeni, besides which he has a good many other kinds. His lowest night temperatures for this year up to the 10th of January were:—1st, 39°; 2nd and 3rd, 44°; 4th and 5th, 45°; 6th, 44°; 7th, 45°; 8th, 44°; 9th, 45°; and 10th, 42°; while his highest day temperatures for the same period were:—1st, 44°; 2nd, 52°; 3rd, 50°; 4th, 49°; 5th, 48°; 6th, 50°; 7th, 48°; 8th, 50°; 9th, 45°; and 10th, 46°. He grows them in a cool vinery attached to the dwelling-house, with only an oil stove to keep out the frost. Besides the above-named Orchids he mentions others, among which are Cypripedium Argus, C. barbatum nigrum, C. × Leeanum superbum, C. venustum, Selenipedium × cardinale, Dendrobium chrysotoxum, D. thyrsiflorum, D. nobile, Cattleya Mossiæ, C. Mendelii, C. labiata, Cœlogyne cristata, C. Massangeana, Cymbidium eburneum, and C. Lowianum. He has succeeded with the above named for the last half dozen years. He remarks that "I shall say it is presumption to grow Orchids under such circumstances." But I most certainly shall not. It is glorious, and only another proof of the old saying, that "where there's a will there's a way." This gentleman is passionately fond of Orchids, and the other saying, that "Fools step in where angels fear to tread," certainly does not apply. His love for Orchids led him to experiment with his existing accommodation, and, thanks to his indomitable perseverance, he overcame his difficulties, and found out the ways and means for a poor man to grow Orchids. He has taught himself what no man could teach him, and what, perhaps, he could teach no other man. It is the wonderful multiplication of *littles* which go to make up the *whole*. The enthusiasm of my correspondent might well be copied by many another amateur, though perhaps few would meet with such success if the same temperatures were employed until they found out for themselves the *littles*. I might venture to say what I should think is the probable cause of his success. 1st, the house may be in a cosy and sheltered position, aspect south; 2nd, the dwelling-house walls may be warmed from the fires and chimney within; and, 3rd, the oil stove burning inside the greenhouse would tend also to keep the atmosphere dry, a condition most necessary with such low temperatures.

Another batch of those Dendrobes that are to flower should now be made tidy and cleaned. When the flower buds are nicely advanced they

usually take about three weeks to expand after being placed in extra warmth. I think Dendrobes form one of the most beautiful and useful class of Orchids in cultivation, and as the general culture of them is exceedingly easy, no one who owns a warm house should be without a good collection of them. There are, however, a few essential points in their cultivation which must be attended to. Firstly, the roots must be in a healthy condition. To secure this end the plants should be repotted about once in two years, although should the compost look to be pretty well preserved they may remain undisturbed a longer period and still do well. Secondly, repot at the right time, which is when the new growth is from one to two inches long, and the new roots commence to push from the base. Repot in good material of fibrous peat and sphagnum, or if the former should not be good, use the latter alone, intermixed with finely-broken crocks and charcoal. Thirdly, after repotting give the plants every encouragement to grow, by giving an abundance of heat and moisture and by placing them near the light; but do not hurry the plants too much at first. After repotting water sparingly, keeping the compost just moist only. Nor should the heat be too strong at first, until the new roots are seen to be taking kindly to the fresh compost. Fourthly, do not give too much root room. Err on the side of small pots, pans, or baskets, rather than large ones. Repotting is work which cannot be done too carefully, and when it becomes necessary do it thoroughly and well. Never insert an old ball of roots with the compost adhering, but remove all the old material, together with any dead roots, spread the healthy live ones carefully out on the new compost near the surface, and simply cover them over with a thin layer of new material, at the same time well securing the pseudobulbs so that the plant is quite firm and unable to sway about when touched. Fifthly, keep the plants scrupulously clean, particularly guarding against yellow thrip and red spider. There are several other important points to be observed in the culture of Dendrobiums, such as resting and temperature during that stage, but these we may for the present pass over, as most of the species will from now until autumn require the same kind of treatment in the warmest house. From experience lately acquired, I prefer to repot D. Wardianum before placing it in extra warmth to bloom. I also prefer to grow it at the lightest and at the same time the most airy part of the house. I grew some last year in a house which as nearly approached the Mexican as the East Indian house, and am well satisfied with the results. The bulbs were not so long, but thicker, and more like the imported ones. These long, new pseudobulbs, twice as long, but only half as thick as the imported ones, are not, I think, a favourable sign. D. Wardianum does not like frequent root disturbance, and it should be established in small receptacles, the following year being shifted into larger ones, which should last for two or three years. Dendrobium Falconeri

should be kept dry for the whole of this month, or it will not flower. Water enough to keep it plump, say by syringing once a week. It is best grown on blocks, letting the new growth ramble. For this species the warmth of the Intermediate house is best.

Miltonia vexillaria is an intermediate species, it is now in full growth, but should not on that account be watered too heavily. It is always best to keep the plants on the dry side, and to get them well up to the light and air. M. Phalænopsis is an Orchid that requires the warmth of the East Indian house during winter, and to be suspended near the glass, or it fails to bloom. M. Roezli grows well at the dampest end of the same house all the year round. M. Warscewiczii is also a heat-loving species, while none of them should be allowed to get too cold during winter, or they suffer.

Among plants offered by auction during the past month I noticed Lælia purpurata, Cattleya intermedia, C. Leopoldi, and Lælio-cattleya × elegans, *all* of which are Intermediate house Orchids. After they have been for some time in an upright position on the stage, and the old roots moistened occasionally, new roots will begin to push, when they should be potted up and treated like established plants. Make well-formed plants by parting and replacing the mass if necessary, and do not insert too much of the old ball of roots, as in time they become a wet inert mass.

Vanda cœrulea is another. I recommend this to be grown in the Intermediate or Cattleya house during summer, and the East Indian house in winter, and like other Vandas it should never be allowed to become very dry. Pot in well-drained baskets in sphagnum moss alone. Anguloa eburnea and other species, perhaps do better in the Intermediate house than in any other, but they will also grow well at the warmest end of the cool house. Trichopilias succeed best treated exactly like the Cattleyas. Vanda Roxburghii is a lovely Orchid and should be grown in the East Indian house. I also note Cattleya × guatemalensis, which should be grown in a warm Intermediate house. Epidendrum vitellinum and Odontoglossum Rossii are cool Orchids, and the first named should be kept rather dry during winter. Lycastes, Maxillarias, and Zygopetalums are Intermediate house Orchids, and, like Anguloas, they all require a compost similar to that recommended for Cypripediums. Coryanthes Wolfii should be grown in a basket suspended in the warmest house.

The Mexican Lælias are now over for another season, but they have well filled up a gap in the dull time which would otherwise have looked very bare. What lovely things some of the white L. anceps are! They appear to vary very much, some having small flowers with only one or two of them on a spike, while others are very large with generally four flowers. These are very handsome, and the flowers are of more substance than the coloured forms, and not nearly so susceptible to injury from the fogs. Mexican Lælias enjoy a good rest after flowering, and should receive only enough

water to keep them plump. Repot, if required, when new roots push from the last-made pseudobulb.

Keep Odontoglossum citrosmum very dry or it may fail to flower. The spikes come from the centre of the new growth when that is about one inch long, and then water may be applied more freely. The pseudobulbs of this species may be allowed to shrivel a little. The spring-flowering Masdevallias will soon be pushing their flower spikes. Do not allow them to get too cool during winter, nor keep them too wet at the root. Dendrobium chrysanthum is also starting to make roots, and may be rebasketed or top-dressed, as the case may require, and taken to the East Indian house.

ORCHID PORTRAITS.

CATASETUM IMPERIALE, L. Lind. and Cogn.—*Journ. of Hort.*, Jan. 10th, p. 25, fig. 5. The C. × splendens, var. imperiale described at p. 18 of our last issue.

CATTLEYA BICOLOR CŒRULEA.—*Gard. Mag.*, Dec. 29th, p. 809, with fig.

CATTLEYA GUTTATA PRINZII.—*Journ. of Hort.*, Jan. 3rd, p. 10, fig. 2.

CATTLEYA LABIATA FOLEYANA.—*Gard. Mag.*, Jan. 5th, pp. 7, 9, with fig.

CŒLOGYNE SWANIANA, Rolfe.—*Reichenbachia*, ser. 2, ii. p. 105, t. 92.

CYPRIPEDIUM CHARLESWORTHII, Rolfe.—*Gartenflora*, Jan. 1st, p. 1, t. 1410.

CYPRIPEDIUM × MRS. FRED. HARDY.—*Gard. Mag.*, Jan. 19th, p. 27, with fig.

CYRTOPODIUM VIRESCENS, Rchb. f. and Warm.—*Bot. Mag.*, t. 7396.

LÆLIA ANCEPS CRAWSHAYANA.—*Journ. of Hort.*, Jan. 24th, p. 67, fig. 12.

LÆLIO-CATTLEYA × HON. MRS. ASTOR.—*Reichenbachia*, ser. 2, ii. p. 97, t. 89.

MILTONIA JOICEYANA.—*Journ. of Hort.*, Jan. 17th, p. 45, fig. 8.

ODONTOGLOSSUM CRISPUM FRANZ MASEREEL.—*Rev. Hort. Belge*, Jan., p. 3, with plate.

ODONTOGLOSSUM GRANDE (monstrous).—*Gard. Chron.*, Jan. 12th, p. 41, fig 6.

ONCIDIUM ORNTHORHYNCHUM ALBIFLORUM.—*Gard. Chron.*, Dec. 29th, pp. 781, 782, fig. 102; *Gard. Mag.*, Jan. 12th, p. 18, with fig.

PHAIUS × AMABILIS, O'Brien.—*Reichenbachia*, ser. 2, ii. p. 99, t. 90, fig. 1.

PHAIUS × MARTHÆ, Sander.—*Reichenbachia*, ser. 2, ii. p. 99, t. 90, fig. 2.

VANDA KIMBALLIANA.—*Gard. Chron.*, Jan. 19th, pp. 68, 69, fig. 10.

ZYGOPETALUM ROSTRATUM, Hook.—*Reichenbachia*, ser. 2, ii. p. 103, t. 91.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE first meeting of the year was held at the Drill Hall, James Street, Westminster, on January 15th, when numerous interesting Orchids were staged, the exhibits in this department being fully up to the average for this time of year.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. W. H. White), exhibited a group of interesting things, including some beautiful hybrid Dendrobiums, including D. × burfordiense, D × Hebe, and varieties of D. × xanthocentron, one called D. × x. pallens being nearly white. D. dicuphum and D. Wattianum each received Botanical Certificates, the latter being a fine specimen with numerous flowers. A fine mass of the dwarf Epidendrum polybulbon with over forty flowers received a Cultural Commendation. Cypripedium × Sallieri Hyeanum, with six flowers, Masdevallia × Courtauldiana, Lælia autumnalis alba, Dendrobium nobile burfordiense, and cut spikes of Phalænopsis Schilleriana, P. Aphrodite, and P. × leucorrhoda were also included in the group.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), obtained a First-class Certificate for Lælia anceps Crawshayana, a very large and richly coloured form. He also showed another handsome form called L. anceps Rosefield variety, and Odontoglossum × Andersonianum pulvereum.

The Right Hon. Lord Rothschild, Tring Park (gr. Mr. Hill), received a Cultural Commendation for a very fine spike of Phalænopsis × F. L. Ames.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), exhibited Cypripedium Boxallii, Cobb's variety, a dark, heavily blotched form, and C. × nitens superbum, the latter receiving an Award of Merit.

Henry Graves, Esq., Orange, New Jersey, U. S. A., exhibited Cypripedium × Henry Graves (C. Lawrenceanum ♀ × C. × Marshallianum ♂), which received an Award of Merit.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford), exhibited several Cypripediums, including C. × Swinburnei magnificum, and a hybrid from C. Lawrenceanum × Curtisii. Also Lælia anceps Dawsoni, Lælio-cattleya × Pallas superba, Cattleya Percivaliana, Tyntesfield variety, a richly coloured form, and Odontoglossum nebulosum candidulum, the latter receiving an Award of Merit.

M. Jules Hye-Leysen, Coupure, Gand, received an Award of Merit for Cypripedium × Madame Jules Hye (C. Spicerianum superbum × C. tonsum), a large and handsome flower.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), exhibited Cypripedium Leeanum aureum, C. × nitens, C. × Euphrosyne (C. Spicerianum × C. × selligerum majus), C. × Daviesianum, and Selenipedium Boissierianum, the latter receiving a Botanical Certificate.

E. Ashworth, Esq., Harefield Hall, Wilmslow, Lælio-cattleya × exoniensis, Lælia autumnalis, a good plant of the original L. anceps alba, also spikes of L. a. Amesiana, L. a. Schroederiana, &c.

C. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited the fine Cattleya Percivaliana alba.

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Cummings), exhibited Lælia autumnalis gigantea.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, exhibited three interesting hybrid Cypripediums, one of which was new. This was C. × Norma (C. Spicerianum ♀ × C. × Niobe ♂), a fine hybrid, which received an Award of Merit. The dorsal sepal is white, with a purple median band, and some slight purple feathering at the sides. The two others were C. × Minos superba (C. Spicerianum ♀ × C. × Arthurianum ♂), and C. × Aeson (C. insigne ♀ × C. Druryi ♂), the former receiving an Award of Merit.

Messrs. F. Sander and Co., St. Albans, staged a very fine group, including several fine hybrid Cypripediums, three of which received Awards of Merit. These were: C. × Mrs. Fred. Hardy (C. superbiens ♀ × C. bellatulum ♂), a very pretty form densely spotted and somewhat lined with purple on a light ground; C. × Madame Georges Truffaut (C. ciliolare ♀ × C. Stonei ♂), a handsome hybrid most approaching the latter, but with broad petals and a reddish bronze hue over the flower; and C. × J. H. Berry (C. × Harrisianum ♀ × C. concolor ♂), a round and massive flower with broad segments. C. × Leeanum virginale is a charming form whose dorsal sepal is nearly pure white. Maxillaria ochroleuca and Dendrobium bursigerum album both received Botanical Certificates. The group also included some handsome Odontoglossums, forms of Lælia anceps, Cymbidium × Winnianum, Phaiocalanthe × Arnoldiæ, the handsome Pescatorea Klabochorum, and others.

Messrs. Linden, L'Horticulture Internationale, Brussels, sent a number of spikes of Cattleya maxima, and received a Vote of Thanks.

Mr. J. Prewett, Swiss Nursery, Hammersmith, showed the handsome Cymbidium Traceyanum.

CORRESPONDENCE, &c.

H. W., Brandon. A small form of Odontoglossum Lindleyanum, apparently undeveloped.

W. J. R., Liverpool. Cattleya Trianæ chocoensis.

P., Brussels. Cypripedium × William Lloyd was exhibited by Mr. P. Weathers, Silverhall Nursery, Isleworth. We had observed that the information was omitted in the journal you mention.

H. L., Stockport. Cattleya Trianæ, very near var. Dodgsoni, but smaller.

We have received the Catalogue of the Leeds Orchid Co., containing a good selection of the more popular varieties.

Subscriptions for 1895 are now due.

OL. III.] MARCH, 1895. [No. 27.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

VOL. III.] *MARCH*, 1895. [No. 27.

NOTES.

THE next meeting of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on March 12th, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

A twelfth Decade of New Orchids described by Mr. Rolfe appears in the January number of the *Kew Bulletin*. They are more particularly noted on another page.

The second part of the Orchids of *Martius' Flora Brasiliensis*, from the pen of Professor Cogniaux, has appeared, comprising Spiranthes, Stenorrhynchus, and the various genera of Neottieæ, also Polystachya, Galeandra, and the Liparis group.

The beautiful Eulophiella Elisabethæ is now flowering in the collection of H. J. Ross, Esq., of Florence; and it is also well in bud in some of our English collections. Mr. Ross, however, points out that he does not find the flowers equal in size to those of the plate, nor do we.

We have received a series of handsome varieties of Cattleya Trianæ from several collections, including Dodgsoni, Osmani, chocoenis, and others which we do not quite recognise.

H. J. Elwes, Esq., is making a speciality of terrestrial Orchids, in the cultivation of which he has been fairly successful. He writes to say that he is anxious to acquire tubers of new or rare species from any part of the world, either by exchange or purchase. His address is Colesborne; Andoversford.

A flower of Cypripedium insigne Macfarlanei from the collection of R. H. Measures, Esq., Streatham, shows a curious departure. Instead of being bright yellow it is decidedly suffused with bright brown. Yet it is part of the original plant, but has been grown close to the glass in a cold house, though in the same materials. The contrast is remarkable.

Flowers of Pleione humilis var. tricolor come from the collection of H. J. Elwes, Esq., the stripes on the lip being bright brown instead of purple, as in the type, which is also sent for comparison. The difference appears to result from an admixture with yellow in the case of the variety.

We have again received flowers of the beautiful Selenipedium × pulchellum from the collection of W. Vanner, Esq., Chislehurst, which, as already pointed out (*supra*, i. p. 166), bears a remarkable resemblance to S. × Sedenii leucorrhodum, in spite of its different parentage.

The unique plant of the beautiful Lælia × Finckeniana has passed into the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow. This season it has produced two fine racemes, each three feet long, on the two bulbs made last year.

A fine form of Cypripedium insigne comes from W. Vanner, Esq., Camden Wood, Chislehurst, probably out of a recent importation. The flower is round and compact, the petals as much as seven-eighths of an inch broad, and the spots of the dorsal sepal numerous and more or less confluent. The colour is about that of typical C. insigne.

NOTES ON ORCHIDS IN THE JUNGLE.

By Major-General E. S. Berkeley.

(*Concluded from vol.* ii. *page* 333.)

In the neighbourhood of Amherst is also found Dendrobium ciliatum, a charming Orchid in this its best form. It has long stems, sometimes two feet long, but plants of this fine form must be very rare in our Orchid houses at home. The form more commonly seen in England is the variety breve, which is very plentiful in the neighbourhood of Thayetmyo. The stems of this are extremely short and stunted, seldom exceeding a few inches long. So utterly distinct are the two plants when out of flower that no one unacquainted with them could conceive that the flowers would be identical; those, however, of the variety growing sparingly throughout the Moulmein district are individually much larger. The long dry season at Thayetmyo accounts for the variety being so stunted in habit.

A very large number of Orchids found in other districts are also found within easy distance of Moulmein. Cœlogyne Parishii is found in two varieties, one very much darker in the markings on the lip than the other, and reminding one of a miniature C. pandurata. A number of pretty little Orchids are also met with not of sufficient value to attract the trade collector, so that we see very little of them at home. The "*Tzin-ban*" of the Burmese is very common, and is sold in the Bazaar during the winter months for the decoration of the ladies, its flower being very sweet-scented. It is Bulbophyllum auricomum, and it is not unlike a Platyclinis. Here also are found in abundance, Camarotis purpurea, many Cirrhohopetalums, Sarcochili, and other gems. Almost all these little Orchids are found growing profusely on the bushes, freely exposed to both air and sun, and it is no uncommon thing to come across a patch of stunted bushes covered with a dozen different kinds. Some of the terete-leaved Sarcanthi are especially pretty, and it is a pity that so few of them find their way to England. The best known is probably S. Williamsoni, and this I found not only in Moulmein, but also in the Andaman islands.

On the highest hills visible from Moulmein, which form the frontier of Siam, there are several Orchids found growing together on the rocks, as Dendrobium Jamesianum (referred to at vol. ii. p. 235), Cymbidium tigrinum, Cœlogyne Huettneriana, consequently the same treatment should suit all of them. These plants are often damaged by being kept too cold during the winter, but the treatment for them is to grow them warm in winter and cool in summer. The situation is too far south for even a hoar frost on the top of the hills, and the plants are kept moist and plump during the winter by the heavy night dews. During the summer the rainfall in these hills is excessive, so that it cannot be said that these plants have much of a resting season. Cymbidium tigrinum with me grows best at the cool end of the Cattleya house. Cœlogyne Huettneriana is charming, producing its sprays of white flowers early in the spring. It is a plant that has an excellent constitution, and gives no trouble, but appears to be very scarce.

The road to Zimme passes through this range of hills, and a gentleman coming from thence showed me an Orchid he had found on the way. It was in flower, and proved to be Vanda Parishii Marriottiana. It is curious if it should turn out that the older variety grows on one side of the hills and the other on the opposite side. I have always heard that the rare Cymbidum Parishii was found on this road, but never came across it myself. If it is in existence it is very curious that it has not been rediscovered. Is it not possible that it is only a variety of Cymbidium eburneum? And if this should be the case, its non-appearance is accounted for.

From Moulmein it is but a short journey across country to Shoaghyn, which is situated on the Sittang river. It is a good plan to cross this district on an elephant, as from an elephant's back it is easy to gather many

Orchids; and here they are scattered, so that the best results are obtained by going across the rough country to any likely looking clump of trees. The whole district surrounding Shoaghyn is rich in Orchids, and the Sittang river affords a natural road. The Karen hills are also easily accessible from this side.

It was in Shoaghyn that I first saw the pretty Dendrobium lasioglossum. Knowing how fond the Burmese ladies are of wearing Orchid flowers in their hair, I have always found it a good plan to visit the native market, to see what flowers are for sale. On my first visit to the market at this place I found bunches of this Dendrobium in flower. It is found about thirty miles out, but as our collectors do not now visit this district this plant does not now come home. Not far from this, also at an easy distance, is found in quantity D. Bensoniæ majus. This is immensely superior to the form found by Benson in the Arracan hills, and is now the variety most usually seen in collections. The plant is distinct, the bulbs being fat and plump, and not thin as in the form which grows in the Arracan hills.

Shoaghyn is an excellent halting-place on the road, on account of the district being so rich in Dendrobiums. It was here that Dendrobium thyrsiflorum used to abound, until the district was denuded by the collectors, but as for some years the collector has not been there, the plants have had time to re-establish themselves. If the traveller has an elephant with him, by making Shoaghyn his head-quarters, he can collect with comfort, as it is not difficult to get comfortable quarters there. It is an easy matter to collect Orchids if any one will go to the expense of hiring an elephant, but without one it is most difficult to penetrate into the most likely country.

There is no better hunting-ground than a swamp in which are growing scattered trees. In such situations Orchids abound, and the various species can be gathered by hand from the elephant's back. The greater number of the collectors I have met with make no personal search, but wait for whatever the native collectors bring in for disposal. Certain varieties are required for the market, and these are alone brought in.

That there are many good Orchids still to be found in Burmah I feel convinced. Ground Orchids have been greatly neglected, and among these there are some beautiful things. I am aware that it is supposed that Burmah is practically worked out. A great deal was done by Parish, and a certain amount of work has been done by Dr. King, but there is still room for some one with plenty of time to take up the interesting task of searching for fresh treasures, and I hope that before long some one will be found to supplement the work already done. It is only by personal trouble that work of this kind can be accomplished, and the present mode of sitting at home and sending native collectors out, is not likely to produce many novelties.

ONCIDIUM AUREUM.

Under the title "Un curieux synonyme" (*Journ. des Orch.*, v. p. 350), Prof. A. Cogniaux calls attention to the fact that Ornithidium bicolor, Lindl. (Rchb. f. in *Walp. Ann.*, vi. p. 489), is a misprint for Odontoglossum bicolor, Lindl. This is a fact I have long known, and the error has been corrected in the *Index Kewensis*. But it brings us scarcely any nearer to a knowledge of the species, which is based upon a copy, by Matthews, of an original drawing of Ruiz and Pavon, made about the end of last century. Suspecting that this drawing must represent some well-known Peruvian plant, I some time ago investigated the matter, and was soon convinced that it is none other than Oncidium aureum, Lindl., whose history is thus carried back for a period of about forty years. The drawing is a little rude, perhaps, and slightly enlarged, but the habit of the plant and shape of the flowers are correct, as well as the toothed crest of the lip and the column wings, while the colour compares very favourably with many modern representations. Reichenbach came very near guessing the truth, for he wrote upon the sheet—"Very near Oncidium aureum," and I believe the identity is now fully established. We may now say that Oncidium aureum was originally discovered by Ruiz and Pavon, in Peru, towards the end of the eighteenth century, but was not described until 1838, when re-discovered by Matthews, on the high mountains near Andimarca. It appears to have been introduced to cultivation in 1853, in which year plants were sold at Stevens' Rooms. Attention having been called to the subject, it seems desirable to place these facts on record, and thus clear up the matter. The following is the amended synonymy :—

ONCIDIUM AUREUM, *Lindl. Sert. Orch.* (1838), sub t. 25.

Odontoglossum bicolor, *Lindl., Bot. Reg.*, xxxi. (1845), *Misc.*, p. 59; Id. in *Benth. Pl. Hartw.*, p. 153 (in note).

Oncidium hemichrysum and O. festatum. Rchb. f. and Warscew., in *Bonplandia*, ii. (1854), p. 100.

Ornithidium bicolor, Rchb. f. in *Walp. Ann.*, vi. p. 489 (non Lindl.).

VANILLA GRIFFITHII.

A note appeared last month (p. 34) respecting Vanilla tolypephora, a new species recently described by Mr. Ridley. I have just discovered that it is the V. Griffithii, Rchb. f. (*Bonplandia*, ii. p. 88), described as long ago as 1854, and as this name is quoted as a synonym of V. albida in the Flora of British India (vi. p. 91), to which allusion is made, the species should have escaped the imposition of a new name. It is a rather common species and was collected by Wallich in 1822, and afterwards described and figured

by Griffith, as Vanilla sp. (*Notul.*, iii. p. 247; *Ic. Pl. Asiat.*, t. 281). Its distinctness from V. albida, Blume, was briefly indicated by Reichenbach, and it is rather curious that two such dissimilar species should ever have been confused together. For some reason or other the specific name proposed by Griffith was not published, and it is unadvisable at the present time to further swell the synonymy by recording it. The practice of raking together every name that has ever been applied to a species, in which some authors so much delight, should be discountenanced. Here is an example culled from Reichenbach, when figuring Cattleya luteola, Lindl. (*Xen. Orch.*, i. p. 209, t. 83). He there quoted the following nine synonyms, in the order named :—Cattleya Urselli, Hort. Schill., Epidendrum Cattleyæ, Hort., Cattleya epidendroides, Hort., C. Holfordi, Hort., C. salmon colour, Hort., C. flavida, Klotzsch, C. modesta, Meyen, and C. Meyeri, Regel. The first five of these names ought to have been ignored altogether, and one of them is positively ridiculous. Once recorded, however, they continue to be handed down, just as if species had been described under these names, and it was necessary to account for them. Such reckless additions to an already burdensome synonymy call for the strongest denunciation, as they serve no useful purpose, and are only a nuisance to future workers. It takes four quarto volumes, closely printed, to record the names of flowering plants alone, some four hundred thousand in all, and the synonymy is growing at a truly alarming rate.

R. A. ROLFE.

BULBOPHYLLUM HOOKERIANUM.

The examination of an authentic type specimen of Bulbophyllum Hookerianum, Wendl. and Kränzl (*Gard. Chron.*, 1894, i. p. 685) enables me to settle a point left doubtful about it (*supra*, ii. p. 236). It is, as supposed, the Bulbophyllum sp. collected by Gustav Mann, and the discrepancy between the two descriptions arises from error in the earlier one. The remark "Columna aptera, ramis 2 subulatis porrectis" describes a sketch made on the sheet, in which the petals are wrongly represented as the teeth of the column, while in another sketch they are correctly drawn as petals. But I should not have described the column as "supra in alas 2 quadratas aucto," for they are really very short broad "teeth," which term better describes these organs throughout the genus. But the species was named as long ago as 1881, for it is the Bulbophyllum oreonastes, Rchb. f. (*Otia Bot. Hamb.*, p. 118), described from Mann's self-same specimen, and of course the earlier name must be retained.

R. A. R.

DIES ORCHIDIANÆ.

SINCE my last notes were written we have had a prolonged spell of exceptionally severe weather, which now appears to be steadily breaking up, and some of my friends have had a few anxious moments with the heating apparatus, though I have not yet heard of any serious breakdown. We have had two or three accounts in the REVIEW lately of amateurs who have succeeded in cultivating Orchids under quite exceptional circumstances, and it would be interesting to learn how they have passed through the recent trying ordeal. Some which I have seen look little if any the worse, but some of the results of a low temperature may not yet be apparent. It is certain, however, that many Alpine Orchids in a wild state endure short periods of a lower temperature than we should consider safe, and without injury. In the Himalayas hoar frost frequently occurs in the winter where Vanda cœrulea and several other Orchids grow, and it is probably the same elsewhere. A few more notes on these greenhouse Orchids would be interesting.

In spite of the cold, however, flowers have been coming on apace, and the houses are gay with various Phalænopses, Dendrobiums, Odontoglossums, and others. Cypripedium insigne is replaced by the beautiful varieties of C. villosum and C. Boxallii, while hybrids between them and other winter-flowering species are also well to the front. Cattleya labiata, again, is replaced by C. Trianæ, in a series of very brilliant forms. Cœlogyne cristata, Lycaste Skinneri, and the brilliant Ada aurantiaca, further add to the display, together with certain species of Phaius, Oncidium splendidum, Zygopetalums, and various others. In short, the brilliant season has now fairly commenced.

And speaking of Cattleya Trianæ reminds me of a little note received the other day. "Dear Argus," it runs, "do you know that your version of the correct spelling of the word Trianæ has been called in question? I altered all my labels once, and thought, now it's all right, but a friend has just called in and tells me it's all wrong. What am I to do?" My correspondent is not the only one who is perplexed about the matter. The *Gardeners' Chronicle* advocates Reichenbach's original spelling of Trianæi, and says, "As Señor Triana was a man, the addition of 'i' in the Latinised genitive form of his name is correct, otherwise the name might be considered to have been given in honour of his wife." The argument may appear plausible, but is none the less erroneous on that account. Look at the old Latin word "Publicola," genitive "Publicolæ." It is a man's name,

but who would ever dream of adding an "i" to the genitive? There are plenty of other cases, and "Triana" is absolutely parallel with them. The simple fact is "Trianæi" is erroneous. Don't change your labels again, but leave those who prefer the blunder to follow their choice.

I note with pleasure that the *Gardeners' Chronicle*, in its issue of February 16th, supports the principle of treating all hybrids derived from the same parentage as forms of one, and naming them accordingly, however variable the progeny may be. "We would urge," it remarks, "that this variation in the progeny is no excuse for substantially different names, but that the same crosses should always bear the same (the original) names, and that in the case of extraordinary and evidently different varieties, a varietal name should be added. . . . What we wish to impress is, that hybrids which have been obtained from the same parents should be kept under the original and well-known names, no matter how dissimilar they may be, in order to preserve order in a subject which would otherwise soon become beyond the depth of human understanding. Extraordinary varieties must of course be recorded, but let them be kept under their proper heads." This course I have recommended on more than one occasion, and hope in future to see it more thoroughly carried out. Unfortunately, the very same issue contains no less than eleven hybrids, all from the same cross, and probably from the same seed-pod, under different names, which surely escaped the eagle eye of the editor. And worse still, the same cross has already been named twice previously.

Now I have no doubt these hybrids are not identical from a florist's point of view. Nor have I any doubt of their beauty, or they would not have all received Certificates. But I am equally convinced that it would have been far better to call them all varieties of C. × aureum, the original name of the hybrid. I am fully aware that some people advocate this system, but if it were generally adopted the result would be something appalling. Let us suppose that there are forty species of Cypripedium in cultivation. This would allow 780 different combinations, or twice that number if reverse crosses are counted. And fancy all of them with thirteen names each! And this takes no account of secondary hybrids. And why only thirteen names each? That number would fail to account for all the forms of C. × Leeanum which I have seen, though happily they are mostly called varieties only, which they certainly are. I must appeal to the raiser of this beautiful series to accept the suggestion, and call them varieties of C. × aureum.

ARGUS.

THE HYBRIDIST.

Dendrobium × Gemma.

This, as its name implies, is a charming little gem, a seedling obtained from D. aureum crossed with the pollen of D. superbum Huttonii, which has just flowered for the first time in the collection of C. Winn, Esq., Selly Hill, Birmingham. The sepals and petals are ivory white, together with the apex and margin of the lip, while the disk bears a feathered blotch of a peculiar shade of light rosy maroon. The lip is well expanded, as in all the hybrids from D. aureum. The flowers are delightfully fragrant, almost like violets, and at present slightly over two and a quarter inches in diameter. The plant is at present very small, the flowering-bulb being under five inches high, and bearing the same number of flowers. It will evidently be a most beautiful thing when it becomes fully developed.

Cypripedium Madame G. Truffaut.

This very pretty hybrid received an Award of Merit on January 15th last, when exhibited by Messrs. F. Sander & Co., as recorded in our last issue (p. 64). We have now received a flower, which shows well the combination of characters, its parents, of C. ciliolare ♀ and C. Stonei ♂. The dorsal sepal is elliptical-ovate, two and a half inches long, and bears eleven deep purple-brown lines on a creamy-white ground. The petals are deflexed, narrow, four and a quarter inches long, tinged with light green on a light ground, and densely spotted with largish purple-brown spots. The characters are well combined, those of C. Stonei being most apparent, but modified by the influence of the other parent.

DENDROBIUM LUTEOLUM SUPERBUM.

A very fine variety of Dendrobium luteolum has appeared in the establishment of Messrs. F. Sander and Co., from whom we have received flowers, together with those of the typical form. It chiefly differs in its enhanced size, but there is the further peculiarity in the flowers sent that the front lobe of the lip is perfectly flat instead of being reflexed. The petals are one inch and three-eighths long, by over five-eighths broad, and the front lobe of the lip an eighth broader still. In a series of flowers placed side by side the difference is very striking. It has the shape of the variety chlorocentrum, Rchb. f., but is still finer, and the hairs on the lip are not green as in that, but light yellow, as in the type. This species, unlike many others, flowers on the young leafy pseudobulbs, during the months of January and February, and when well grown is very attractive.

DENDROBIUMS AT CHELTENHAM.

Last month (p. 53) we gave an account of the method of culture employed for Dendrobiums by Mr. J. Cypher, of Cheltenham, who is one of our most successful growers, and now we have received a box of flowers showing the results. Of course, there is nothing novel about the treatment, which is practically that followed by all good cultivators, but Mr. Cypher makes a speciality of the genus and understands those multitudinous little details, attention to which often makes all the difference between success and failure. And although many Dendrobiums are accommodating enough, there can be little doubt that their requirements can be better looked after in houses specially devoted to them than in a mixed collection of Orchids. Ten different kinds are sent. First we may note the very charming and fragrant D. aureum and its paler unscented variety philippinense, which should be in every collection, as well as the superb hybrids D. × Leechianum and D. × splendidissimum, which, strictly speaking, are varieties of D. × Ainsworthii, all having been derived from D. aureum and D. nobile. A raceme of D. × crassinodi-Wardianum sent is from a bulb two feet long, while its pretty white variety album is analogous with D. Wardianum candidum in colour, though the shape and small blotch on the disc are those of the hybrid. The history of this hybrid has been given in these pages, and it was figured at p. 177 of the last volume, together with its two parents. Two fine forms of D. crassinode are enclosed, one being the brilliantly coloured variety Barberianum, and the other a larger but rather paler form. D. crepidatum is a very pretty form, its orange-coloured lip contrasting effectively with the blush white sepals and petals. This species is sometimes disappointing, as some forms are self-fertilising, and the flowers do not open properly. Lastly may be mentioned a bunch of that chaste and fragrant little hybrid D. × euosmum, in which the good qualities of D. japonicum, aureum, and nobile are combined, all three being concerned in its parentage. Mr. Cypher's houses must be a picture of loveliness at this season.

CYPRIPEDIUM × MONS. DE CURTE.

Four hybrids between Cypripedium Boxallii and C. insigne have been raised, and a different name has been imposed in each case, though all are simply forms of one hybrid, but we are not sure which is the original one. C. × sibyrolense and C. × Madame de Curte have both the parentage just mentioned; C. × Schlesingerianum had C. i. Maulei for one parent, which in C. × Mons. de Curte was replaced by C. i. Chantinii. Which is the original one of these we are not quite sure. A fifth hybrid must now be added to the list, raised from C. i. punctato-violaceum and C. Boxallii

atratum, which has just flowered in the collection of Fred. Hardy, Esq., of Ashton-on-Mersey. It is a very fine thing, being of good shape and colour, and best comparable with C. × nitens superbum. The dorsal sepal is green with a broad white margin, and regularly spotted with large purple-brown blotches, those near the median nerve being as much as two lines in diameter. We are not quite sure which of the four names mentioned above is the oldest, but the present plant is evidently a variety of the same hybrid, and the above name may be provisionally applied, as it comes nearest to it in parentage.

HYBRID SELENIPEDIUMS.

WHEN completing our "History of Orchid Hybridisation" (vol. i. p. 360), we promised to give a tabulated summary of the hybrids obtained in the different genera, in a form suitable for ready reference. Owing to various reasons the publication has been somewhat delayed, though not by any means lost sight of, but we now commence the list with the genus Selenipedium— a very clearly defined and natural group which until recently has scarcely been recognised in gardens. Some discussion has taken place at different times as to its distinctness, but the fact is that it occupies a sort of midway position between the ancestral group Apostasieæ and Cypripedium, having retained the three-celled ovary and axile placentation of the former, and is fully entitled to generic recognition. We therefore adopt it without hesitation, and believe it will prove a decided convenience to have the various hybrids brought together, instead of being scattered about among those of Cypripedium, owing to the exigencies of an alphabetical arrangement, as at present. Had Reichenbach had the courage of his opinions when separating Selenipedium as a distinct genus, in 1854, the inconvenience of a change would scarcely have been felt, so few were the species then in cultivation, but he adopted a sort of double-barrelled nomenclature, giving one name for science and another for gardens—a system whose absurdity must be apparent to every one who will reflect a moment.

A few words of explanation are necessary as to the arrangement adopted. The object being to give an analysis of the results obtained, and at the same time to indicate the possibilities of future work, a classified arrangement was finally adopted, as more suitable than either an alphabetical or a chronological one, neither of which could possibly give such graphic results, and the addition of an Index provides all that is necessary for ready reference. Table I. gives a graphic representation of the various crosses which have been made; Table II. supplies their names, parentage, and raisers; Table III. indicates the original description, published figures, and synonymy; while an alphabetical Index completes the list.

TABLE I. GRAPHIC REPRESENTATION OF HYBRIDS OBTAINED.

S. Schlimii

v. albiflorum

S. Lindleyanum ×1 ×2 ×2 ×2

S. longifolium ×2

v. Hartwegii ×2 ×3 ×4

v. Hincksianum ×4 ×5

v. magnificum

v. Roezlii ×6 ×11

S. vittatum ×11

S. Boissierianum ×7 ×8 ×10

S. caricinum ×8 ×19

S. caudatum ×9 ×19 ×17 ×17

v. Uropedium ×10 ×10 ×9 ×18

v. Wallisii ×20 ×20

v. Warscewiczii ×21 ×21 ×12

S. × Sedenii ×16

v. albanense ×16

v. candidulum ×16 ×15 ×23 ×22

v. leucorrhodum ×22

v. porphyreum ×24

S. × conchiferum ×14

v. chlorops ×25 ×13

S. × grande ×13

S. × Dominianum

S. × Ainsworthii

v. calurum.

S. × cardinale.

The list of names in the left hand column indicates the parents, the crosses to the right the hybrids, while the figures correspond with those in Tables II. and III. Diagonal lines are supposed to extend from the different parents, and every point of intersection represents a possible cross. The parents are systematically arranged, first the species, then those hybrids which have been themselves used as parents. The parentage of every cross is seen by tracing the dotted lines back to the list of names in the margin.

TABLE II. List of Hybrids, showing their Parentage and Raisers.

A. Primary Hybrids.

Hybrids.	♀ Parent.	♂ Parent.	Raiser.
1. S. × L'Unique	Lindleyanum	Schlimii albiflorum	Ingram.
2. S. × Sedenii	longifolium	Schlimii	Veitch.
	Schlimii	longifolium	
var. albanense	,,	,, Hincksianum	Sander.
var. candidulum	longifolium	Schlimii albiflorum	Veitch.
var. leucorrhodum	,, Roezlii	,, ,,	,,
var. porphyreum	,, ,,	Schlimii	,,
var. Weidlichianum	,, Hartwegii	,,	Cookson.
3. S. × Stella	Schlimii	vittatum	Sander.
4. S. × Cleola	,, albiflorum	Boissierianum	Veitch.
	Schlimii		
5. S. × stenophyllum	,,	caricinum	Bowring.
6. S. × Saundersianum	caudatum Warscewiczii	Schlimii	Marshall.
7. S. × conchiferum	caricinum	longifolium Roezlii	Bowring.
var. chlorops			Baron N. Rothschild.
8. S. × grande	longifolium Roezlii	caudatum	Veitch.
var. atratum	,, ,,	,,	,,
var. macrochilum	,, ,,	,, Uropedium	,,
9. S. × Dominianum	caricinum	caudatum	,,
var. Clymene	,,	,, Wallisii	,,

B. Secondary Hybrids.

(a) *Derived from two species.*

10. S. × Ainsworthii	longifolium Roezlii	Sedenii	Dr. Ainsworth.
var. Brownii	,, magnificum	,, leucorrhodum	Pitcher and Manda,
var. calurum	longifolium	Sedenii	Veitch.
var. delicatum	,, Hincksianum	,, candidulum	Captain Hincks.
var. robustum	Sedenii	longifolium	Baron N. Rothschild.
11. S. × cardinale	,,	Schlimii albiflorum	Veitch.
var. rubicundum	Schlimii	Sedenii	R. I. Measures.
var. Vanneri	Sedenii	Schlimii albiflorum	Vanner.
12. S. × (unnamed)	cardinale	longifolium	R. I. Measures.
13. S. × Lemoinierianum	Ainsworthii calurum	Sedenii porphyreum	Lemoinier.
var. compactum	Sedenii candidulum	Ainsworthii calurum	Ingram.
14. S. × Rosy Gem	cardinale	Sedenii	,,
15. S. × giganteum	caudatum Uropedium	grande	Veitch.
16. S. × nitidissimum	caudatum	conchiferum	Cookson.
var. chrysocomes	,, Warscewiczii	,,	Seeger and Tropp.
var. Clonius	conchiferum	caudatum Wallisii	Veitch.

(b) *Derived from three species.*

17. S. × Baconis	conchiferum chlorops	Schlimii	Sander.
var. Edithæ	conchiferum	,, albiflorum	,,
18. S. × albopurpureum	Schlimii	Dominianum	Veitch.
19. S. × Perseus	Sedenii porphyreum	Lindleyanum	..
var. Phædra	,, candidulum	,,	,,
var. Thersites	Sedenii	,,	,,
20. S. × Brysa	,, candidulum	Boissierianum	,,
var. Venus	,, albanense	,,	Sander.
21. S. × Schroederæ	caudatum Warscewiczii	Sedenii	Veitch.
var. Roeblingiæ	Sedenii candidulum	caudatum	Pitcher and Manda.
22. S. × Hardyanum	caudatum	Ainsworthii	G. Hardy.
var. Penelaus	Ainsworthii calurum	caudatum Uropedium	Veitch.

(*c*) *Both parents themselves hybrids* (see also Nos. 12–14).

Hybrids.	♀ Parent.	♂ Parent.	Raiser.
23. S. × Coppinianum	Sedenii	conchiferum	Sander.
24. S. × pulchellum	grande	Sedenii candidulum	Vanner.
25. S. × Elsteadianum	conchiferum	grande	Ingram.

Several points are brought out prominently in Tables I. and II., one of the first being that the pretty little S. Schlimii has been crossed with all the six species which have been brought within the range of the hybridist, either directly or through their several varieties, and in most cases with the happiest results. There are two other species in cultivation which may yet be added to the list, namely, S. Klotzschianum and S. Sargentianum. Another point is the important part played by S. × Sedenii and its varieties. This hybrid was originally obtained from both S. longifolium crossed with S. Schlimii and the reverse cross; then it was again used in combination with each of the parents and their varieties, giving rise to a series of secondary hybrids, which have again been variously combined, until they form a series practically confluent, which might almost be considered as varieties of the original S. × Sedenii. The whole series here grouped under numbers 2 and 10 to 14 are simply combinations of S. longifolium, S. Schlimii, and their varieties. And taking the remainder of the secondary hybrids we find that some form of S. × longifolio-Schlimii has been used as one parent in a majority of cases. It will also be observed that in six cases both parents are themselves of hybrid origin, though three of them belong to the longifolio-Schlimii group just mentioned. Finally, we note how great are the possibilities of future work. Some crosses are not worth making, from a florist's standpoint, but there are many that are—indeed some are already made, and as the seedlings are gradually progressing towards the flowering stage, a continuous addition to the list may be anticipated.

With respect to parentage, great care has been taken to keep the list correct, so far as the original records go, but this point has not always been stated, or even known, in which case later records have been utilised. Differences of opinion may be expressed with regard to the arrangement of varieties, and we may therefore remark that the principle followed has been that of considering hybrids derived from forms of the same species as varieties of one, as for example, S. × Sedenii. No attempt has been made to separate reversed crosses, as in many cases it cannot be done. Other points will probably explain themselves.

Table III. List of Hybrids with References and Synonymy.

1. S. × L'Unique. C. × L'Unique, *Orch. Rev.*, i. p. 318.

2. S. × Sedenii, Rchb. f. in *Gard. Chron.*, 1873, p. 1431 (in note); *Id.*, 1886, ii. pp. 596, 597, fig. 117–18 (peloria). C. × Sedenii, Rchb. f., *l.c.*; *Fl. Mag.*, n.s., 1876, t. 206; *Id.*, 1878, t. 302; *Gartenfl.*, xxiv. pp. 149, 150, with fig.; *Id.*, xxvi. pp. 85, 86, with fig.; *Jenn. Orch.*, t. 4; *Puydt Orch.*, p. 265, t. 13; *Orchidophile*, 1882, p. 179, with fig.; *Veitch Man. Orch.*, iv. pp. 105, 106, with fig.

VAR. ALBANENSE. S. × albanense, *Desb. Monogr. Cyp.*, p. 143. C. × albanense, *R. I. Meas. Cyp.*, ed. 2, p. 4. C. × Sedenii albanense, *Veitch Man. Orch.*, iv. p. 105.

VAR. CANDIDULUM, *Nichols. Dict. Gard.*, iii. p. 414; *Lindenia*, vi. p. 13, t. 245. C. × Sedenii candidulum, Rchb. f. in *Gard. Chron.*, 1884, ii. p. 489.

VAR. LEUCORRHODUM. S. × leucorrhodum, *Desb. Monogr. Cyp.*, p. 148; *Orch. Rev.*, i. p. 169, fig. 11. C. × leucorrhodum, Rchb. f. in *Gard. Chron.*, 1885, i. p. 270.

VAR. PORPHYREUM, *Desb. Monogr. Cyp.*, p. 150; S. × porphyreum, Rchb. f. in *Gard. Chron.*, 1878, i. p. 366 (in note). C. × porphyreum, Rchb. f., *l.c.* C. × Sedenii porphyreum, *Veitch Man. Orch.*, iv. p. 106.

VAR. WEIDLICHIANUM, Rolfe in *Reichenbachia*, ser. 2, ii. p. 7, t. 51. S. × Weidlichianum, *Gard. Chron.*, 1890, ii. p. 702. C. × Weidlichianum, *R. H. Meas. Cyp.*, ed. 2, p. 111.

3. S. × STELLA, *Orch. Rev.*, ii. p. 110.

4. S. × CLEOLA, *Orch. Rev.*, i. p. 326. C. × Cleola, *Gard. Chron.*, 1890, ii. p. 570.

5. S. × STENOPHYLLUM, Rchb. f. in *Gard. Chron.*, 1876, i. p. 461 (in note). C. × stenophyllum, Rchb. f., *l.c.*

6. S. × SAUNDERSIANUM, *Orch. Rev.*, i. pp. 16, 131. C. × Saundersianum, Rchb. f. in *Gard. Chron.*, 1886, ii. p. 654.

7. S. CONCHIFERUM, *Nichols. Dict. Gard.*, iii. 414. C. × conchiferum, Rchb. f. in *Gard. Chron.*, 1881, i. p. 330.

VAR. CHLOROPS. S. × chlorops, Rchb. f. in *Gard. Chron.*, 1888, i. p. 584 (in note); C. × chlorops, Rchb. f., *l.c.*

8. S. × GRANDE, Rchb. f. in *Gard. Chron.*, 1882, ii. p. 488 (in note); *Desb. Monogr. Cyp.*, p. 147, with fig.; *Lindenia*, vi. p. 7, t. 242; *Reichenbachia*, ser. 2, i. p. 35, t. 16. C. × grande, Rchb. f. in *Gard. Chron.*, 1881, i. p. 462; *Id.*, 1882, ii. p. 488; *Berlin Gartenz.*, 1884, pp. 497, 498, fig. 146; *Veitch Man. Orch.*, iv. p. 104, with fig.; *Warn. Sel. Orch.*, iii. t. 33.

VAR. ATRATUM. C. × grande atratum, *R. H. Meas. Cyp.*, ed. 1, p. 25; *Gard. Chron.*, 1894, i. p. 692, with plate.

VAR. MACROCHILUM. S. × macrochilum, *Orch. Rev.*, i. p. 326. C. × macrochilum, O'Brien, *Gard. Chron.*, 1891, ii. pp. 199, 343, fig. 40.

9. S. × DOMINIANUM, Rchb. f. in *Gard. Chron.*, 1870, p. 1151 (in note). C. × Dominianum, Rchb. f., *l.c.*; *Fl. Mag.*, 1870, t. 499; *Fl. and Pomol.*, 1874, pp. 56, 57, with fig.; *Orchidophile*, 1882, pp. 452, 453, with fig. ("Dominii"); *Veitch Man. Orch.*, iv. p. 103, with fig.

VAR. CLYMENE, *Orch. Rev.*, p. 160. S. × Clymene, *l.c.* C. × Dominii albiflorum, *R. I. Meas. Cyp.*, ed. 3, p. 19.

10. S. × AINSWORTHII, Rchb. f. in *Gard. Chron.*, 1879, i. p. 748; *Desb. Monogr. Cyp.*, p. 143 ("Ainsworthianum"). C. × Ainsworthii, Rchb. f. in *Gard. Chron.*, 1879, i. p. 748.

VAR. BROWNII. C. × Brownii, *Gard. Chron.*, 1891, ii. p. 49.

VAR. CALURUM. S. × calurum, *Nichols. Dict. Gard.*, iii. p. 413; *Lindenia*, vii. p. 35, t. 304. C. × calurum, Rchb. f. in *Gard. Chron.*, 1881, i. p. 41; *Fl. and Pomol.*, 1884, p. 145, t. 619; *Orchid Album*, iii. t. 136.

VAR. DELICATUM, *Orch. Rev.*, i. 244.

VAR. ROBUSTUM. C. × robustum, Rchb. f. in *Gard. Chron.*, 1889, i. p. 394 ("robustius").

11. S. × CARDINALE, Rchb. f. in *Gard. Chron.*, 1888, ii. p. 488 (in note); *Orch. Rev.*, i. p. 81, fig. 5. C. × cardinale, Rchb. f., in *Gard. Chron.*, 1888, ii. p. 488; *The Garden*, 1885, i. p. 520, t. 495; *Veitch Man. Orch.*, 4, pp. 102, 103, with fig.; *Orchid Album*, viii. t. 370.

VAR. RUBICUNDUM. C. × rubicundum, *R. I. Meas. Cyp.*, ed. 3, p. 50.

VAR. VANNERI. C. × Vanneri, Ballif in *Journ. des Orch.*, v. p. 57. C. × cardinale, Vanner's var., *Gard. Chron.*, 1890, i. p. 208.

12. S. × (unnamed), *Orch. Rev.*, i. pp. 319, 320.

13. S. × LEMOINIERIANUM. C. × Lemoinierianum, Rchb. f. in *Gard. Chron.*, 1888, i. p. 712; *Reichenbachia*, ser. 1, ii. p. 89, t. 89. C. × calurum var. Rougieri, *Orchidophile*, 1892, p. 175, with plate.

VAR. COMPACTUM. C. × compactum, *R. H. Meas. Cyp.*, ed. 2, p. 28.

14. S. × ROSY GEM. C. × Rosy Gem, *R. I. Meas. Cyp.*, ed. 3, p. 51.

15. S. × GIGANTEUM. S. × macrochilum giganteum, *Orch. Rev.*, ii. p. 186. C. × macrochilum giganteum, *Gard. Mag.*, 1894, i. p. 265, with fig.; *Journ of Hort.*, 1894, i. pp. 386, 387, fig. 62; *Gard. Chron.*, 1894, i. p. 602.

16. S. × NITIDISSIMUM, Rchb. f. in *Gard. Chron.*, 1888, ii. p. 6 (in note); *Reichenbachia*, ser. 2, i. p. 57, t. 27. C. × nitidissimum, Rchb. f. in *Gard. Chron.*, 1888, ii. p. 6.

VAR. CHRYSOCOMES. C. × chrysocomes, Rolfe in *Gard. Chron.*, 1892, i. p. 781. S. × hybridum, *Orch. Rev.*, i. p. 326.

VAR. CLONIUS. S. × Clonius, *Orch. Rev.*, i. 374. C. × Clonius, *Journ. of Hort.*, 1893, ii. pp. 394, 395, fig. 59; *Gard. Chron.*, 1893, ii. p. 536.

17. S. × BACONIS, *Orch. Rev.*, i. p. 358. C. × Baconis, Kränzl. in *Gard. Chron.*, 1892, i. p. 171.

VAR. EDITHÆ. S. × Edithæ, *Orch. Rev.*, i. p. 358. C. × Edithæ, Kränzl. in *Gard. Chron.*, 1892, ii. p. 458.

18. S. × ALBOPURPUREUM, Rchb. f. in *Gard. Chron.*, 1877, ii. p. 38 (in note). C. × albopurpureum, Rchb. f., *l.c.*; *Orchidophile*, 1883, pp. 508, 509, with fig.; *Veitch Man. Orch.*, iv. pp. 101, 102, with fig.

19. S. × PERSEUS, *Orch. Rev.*, i. p. 358. C. × Perseus, *Gard. Chron.*, 1892, ii. p. 622.

VAR. PHÆDRA. S. × Phædra, *Orch. Rev.*, i. p. 52. C. × Phædra, *l.c.*, p. 61; *Gard. Chron.*, 1893, i. p. 80.

20. S. × BRYSA, *Orch. Rev.*, i. p. 358. C. × Brysa, *Gard. Chron.*, 1892, ii. p. 343. S. × John Ashworth, *Orch. Rev.*, ii. p. 374.

VAR THERSITES. C. × Thersites, *R. I. Meas. Cyp.*, ed. 3, p. 57.

VAR. VENUS. C. × Venus, Ballif in *Journ. des Orch.*, v. p. 69. C. × Hanischianum, Ballif *l.c.*, p. 61. S. × (unnamed), *Orch. Rev.*, i. p. 286.

21. S. × SCHRŒDERÆ, *Nichols. Dict. Gard.*, iii. p. 414. C. × Schrœderæ, Rchb. f. in *Gard. Chron.*, 1883, i. p. 432; *Orchid Album*, v. t. 196; *Veitch Man. Orch.*, iv. p. 105, with fig.; *Lindenia*, ii. p. 45, t. 69 (var. splendens).

VAR. ROEBLINGIÆ. C. × Mrs. W. A. Roebling, *R. I. Meas. Cyp.*, ed. 3, p. 42.

22. S. × HARDYANUM, *Orch. Rev.*, i. p. 358. C. × Hardyanum, *Gard. Chron.*, 1893, i. p. 636.

VAR. PENELAUS. C. × Penelaus, *Orch. Rev.*, i. p. 61; *Gard. Chron.*, 1893, i. p. 80; *Journ. of Hort.*, 1893, i. p. 219, fig. 45.

23. S. × COPPINIANUM, *Orch. Rev.*, i. p. 325. C. × Coppinianum, *R. H. Meas. Cyp.*, ed. 2, p. 28.

24. S. × PULCHELLUM, *Orch. Rev.*, i. p. 166.

25. S. × ELSTEADIANUM, *Orch. Rev.*, i. p. 358. C. × Elsteadianum, *R. I. Meas. Cyp.*, ed. 3, p. 35.

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CYPRIPEDIUM × BUCHANIANUM MAGNIFICUM.

THIS fine hybrid was described in our last number (p. 36), and now we have the pleasure of figuring it. As already pointed out, it was raised from C. Spicerianum ♀ and C. Druryi ♂, and thus is the reversed cross of C. × Buchanianum, which flowered for the first time some seven years previously. The general resemblance to C. Spicerianum will be apparent at a glance, in every part of the flower, though the influence of the other parent is also apparent, particularly in the dark band of the petals, and in a decided shade of yellow in these and other organs. It is a decided improvement on the

Fig. 4. CYPRIPEDIUM × BUCHANIANUM MAGNIFICUM.

original form, and the difference may have arisen from a finer form of C. Spicerianum being used as a parent. One can hardly ascribe it to the inverted parentage. The photograph which was taken by M. Seavy, of Camberwell, was kindly forwarded to us by R. I. Measures, Esq., in whose collection the hybrid was raised. Most of the hybrids of C. Spicerianum follow the parental habit of flowering during the winter, when they are particularly useful, as, for example, C. × Leeanum, C. × Lathamianum, C. × nitens, C. × Niobe, and C. × Buchanianum. In short, we are rapidly acquiring quite a series of beautiful forms of this useful class.

NOVELTIES.

CRYPTOPHORANTHUS MINUTUS, Rolfe.—A minute species, which flowered with Mr. James O'Brien, in November, 1891. It is far smaller than any other hitherto known, being but little over half an inch high, with the flowers comparatively large and maroon-purple in colour. It is allied to the Brazilian C. punctatus, Rodr., but its exact habitat is unknown. All the members of this remarkable genus have closed flowers, the only openings being a pair of windows at the side.—*Kew Bulletin*, 1895, p. 5.

CRYPTOPHORANTHUS OBLONGIFOLIUS, Rolfe.—An Andine species, which flowered at Glasnevin in November, 1894, and is believed to have been introduced by Messrs. Charlesworth, of Heaton, Bradford, who sent dried specimens to Kew five years previously. It is allied to the West Indian C. atropurpureus, Rolfe, and the flowers are dull yellow with maroon-purple veins.—*Kew Bulletin*, 1895, p. 5.

MICROSTYLIS MACROCHILA, Rolfe.—A handsome species, the largest flowered one yet known, which appeared in the collection of Sir Trevor Lawrence in May, 1894. The leaves are almost identical with those of M. Scottii, Hook f., for which it was purchased, and no difference was detected until it flowered. The sepals and petals are light yellowish green, and the lip, which is half an inch broad, deep red-purple. It is believed to have come from a small island off the east coast of the Malay Peninsula.—*Kew Bulletin*, 1895, p. 6.

DENDROBIUM INFLATUM, Rolfe.—A Javan species of the section Pedilonium, allied to D. auroroseum, Rchb. f., but with white flowers and a little yellow at the apex of the lip. It was introduced by Messrs. Linden, L'Horticulture Internationale, Brussels, with whom it flowered in June last.—*Kew Bulletin*, 1895, p. 6.

BULBOPHYLLUM DISCIFLORUM, Rolfe.—A remarkable species introduced from Laos, Siam, by Messrs. Linden, with whom it flowered last October. The sepals are united at the base into a broad flat disc, whence the parallel petals arise—hence the name. The flowers are large, greenish yellow, with many small red-brown spots, and a darker lip.—*Kew Bulletin*, 1895, p. 7.

CIRRHOPETALUM WHITEANUM, Rolfe.—A small species allied to C. vaginatum, Lindl., which flowered with Mr. James O'Brien, and is said to have been received on roots of Vanda Stangeana from the Moluccas. This Vanda, however, was described as coming from Assam, so that the locality remains a little doubtful. The flowers are light straw colour with a bright

yellow lip. It is dedicated to Mr. W. H. White, of Burford, Dorking.—*Kew Bulletin*, 1895, p. 7.

MEGACLINIUM IMSCHOOTIANUM, Rolfe.—A species which flowered with M. A. Van Imschoot, of Gand, in July last. It is allied to M. oxypterum, Lindl., and has light yellowish green flowers with dusky brown markings. The precise habitat is not known, but the genus is entirely African.—*Kew Bulletin*, 1895, p. 8.

MAXILLARIA SANGUINEA, Rolfe.—A distinct and very pretty species, received from the neighbourhood of the Chiriqui lagoon by Mr. James O'Brien, with whom it flowered in April, 1890. It is allied to M. tenuifolia, Lindl., and has sepals and petals variegated with reddish brown and yellow, and a carmine or purple-crimson lip with a blackish purple crest.—*Kew Bulletin*, 1895, p. 8.

ONCIDIUM PANDURATUM, Rolfe. — A very distinct species allied to Oncidium anthocrene, Rchb. f., but with smaller and more numerous flowers. It was sent home with Odontoglossums, in 1891, by Mr. A. Millican, and flowered in the collection of Welbore S. Ellis, Esq., Hazelbourne, Dorking, last October. The flowers are deep reddish brown, the sepals narrowly margined with yellow, and the small side lobes of the lip of the latter colour, while the larger isthmus is shining brown.—*Kew Bulletin*, 1895, p. 9.

SARCANTHUS AURICULATUS, Rolfe.—A species allied to *S. Parishii*, Rchb. f., which flowered with Mr. James O'Brien, in June, 1890, and subsequently. The flowers are pale greenish white with a purple line on each of the sepals and petals, and the side lobes of the lip auriculate.—*Kew Bulletin*, 1895, p. 9.

CYPRIPEDIUM WALTERIANUM, Kränzl.—Described as a new species, or perhaps a natural hybrid between Cypripedium Lowii and another parent unknown, though the locality is different. It bears much resemblance to the former, but the spots at the base of the petals are said to be absent, and the staminode different. It flowered in the collection of M. T. Walter of Magdeburg.—*Gard. Chron.*, February 9, p. 166.

CATTLEYA AURANTIACA.

The flowering of this rare Cattleya in the collection of H. J. Ross, Esq., of Florence, some time ago, has again called attention to its correct nomenclature. It was originally described as Epidendrum aurantiacum, and is

still generally known under this name. On its original description in 1838 Bateman remarked: "This is a most remarkable species, and I was for some time doubtful whether it were an Encyclia, Cattleya, or Epidendrum. On the whole, however, it seems to approach nearest to the latter genus." And elsewhere he observed, "The habit of this plant is so precisely that of Cattleya, that, prior to its blossoming, and when nothing was known of its flowers but their colour, we gave it the provisional name of 'Orange Cattleya'—a title by which it is still known in many collections." Two years later, Mr. P. N. Don removed it to Cattleya, remarking that it only differed in the size of the flower. Lindley, who retained it in Epidendrum, placed it in a separate section, called Epicladium, to which, however, he added two species which belong to section Encyclium, namely, E. campylostalix, Rchb. f. and E. Boothianum, Lindl. Reichenbach reduced the whole genus Cattleya to Epidendrum, but Bentham, who took the more rational view of its generic distinctness, agreed with Don in considering this particular species as a true Cattleya, an opinion which, after an examination of living flowers, I fully endorse. The habit, the large spathe, and the free lip enrolling the column are entirely those of Cattleya, as are all the other characters, in fact, the natural affinity of the species is with C. Skinneri, in spite of the smaller size and different colour of the flowers. It grows in Mexico and Guatemala, on exposed rocks, and sometimes on branches of Taxodium distichum, at a high elevation, and was originally sent from the latter country in 1835 by Skinner, who remarks that it is plentiful only in the higher parts, where it is subjected to great extremes of heat and cold, and where the mean temperature does not exceed 65°. Flowers and a drawing were originally communicated to Bateman by Sir Charles Lemon. It also flowered in Mr. Bateman's collection at Knypersley, and in those of Lord Rolle and Mr. Brocklehurst. The flowers are rich orange colour, or sometimes rather paler, but they have a tendency to self-fertilise and not to open properly, a character which was observed years ago. In some localities it grows with C. Skinneri, and the two have intercrossed and given rise to the rare and beautiful natural hybrid C. × guatemalensis. Some years ago, on the supposition that one parent was an Epidendrum, I called this plant Epicattleya × guatemalensis, but it is now evident from the above facts that this name must give place to the original one. Mr. Ross's plant was obtained from the Liverpool Horticultural Co., and I believe few others are now in cultivation. The following is the amended synonymy:—

CATTLEYA AURANTIACA, P. N. Don in *Florist's Journ.*, 1840, p. 185.

Epidendrum aurantiacum, Batem. in *Bot. Reg.*, xxiv., *Misc.*, p. 8; *id. Orch. Mex. and Guat.*, t. 12; *Lindl. Fol. Orch. Epid.*, p. 2.

R. A. ROLFE.

CATASETUM × SPLENDENS.

Some further facts have come to hand respecting this remarkable Catasetum, which has been so much in evidence of late. A plant has now flowered at Glasnevin, with Mr. F. W. Moore, who at once recognised it by the description. The flowers are ivory-white, but the lip less expanded than in the typical form. A rather distinct variety has also appeared in the collection of the Right Hon. J. Chamberlain, M.P. The flowers are much like those of C. × s. flavescens (*supra*, ii. p. 357), both in shape and colour, but the petals are densely covered with small red-brown spots. It may be called C. × s. punctatissimum. The lip is deep yellow and the mouth scarcely an inch across.

The last number of the *Lindenia* also contains figures of seven forms of C. × splendens, though four of them appear under different names. The sign of hybridity is omitted in every case, though with a single exception they are considered to be natural hybrids between C. macrocarpum and C. Bungerothii, a singular confirmation of what I wrote three months ago. The exception is C. imperiale, L. Lind. and Cogn., and of this Prof. Cogniaux asks :—Is it a variety of C. Bungerothii, a distinct type, or a natural hybrid? adding that categorical affirmations on these points are very easy, but are not of much scientific importance. I would, however, reply that this plant shows the same unmistakable combination of characters as the rest of the series to which it belongs. The five forms to which specific names are given cannot be distinguished by any definite characters and four of them are admitted to be of the same origin and parentage. The additional material which has come to hand only confirms the view originally expressed that this polymorphic series has arisen from the intercrossing of C. macrocarpum and C. Bungerothii by insect agency, and thus are forms of one polymorphic hybrid. The following varieties are additional to those already noticed :—

C. × s. album, L. Lind. and Cogn.—An ivory-white form, like the original one which appeared with Messrs. Hugh Low and Co.

C. × s. atropurpureum, Cogn.—A remarkable variety with flowers wholly dark purple, except a yellow area round the mouth of the sac. It is typical in structure.

C. × s. Aliciæ, L. Lind. and Cogn.—Sepals and petals bearing numerous dull purple spots, which are somewhat confluent in lines, on a pale whitish green ground. Lip white with the cavity of the spur yellow.

C. × s. mirabile (C. mirabile, Cogn.).—Fairly typical in shape, but the lip more saccate and somewhat reflexed in front. Sepals and petals light green, the latter bearing numerous purple-brown spots, which are confluent at the base. Lip yellow with a large purple-brown blotch on either side at the base, formed of confluent spots.

There is one other variety which deserves to be distinguished, namely that with the shape of C. × s. flavescens, but the colour ivory-white, which appeared with Messrs. B. S. Williams and Son. It almost combines the shape of C. macrocarpum with the colour of C. Bungerothii, and may be called C. × s. eburneum.

Distinct as are some of the varieties named, it is probable that their limits will be somewhat obscured in future by the appearance of intermediate forms, a few of which have already appeared. Several of them are very handsome, and it is to be hoped that they will help to popularise this very remarkable genus. All the flowers which have hitherto appeared have been males, but it is quite possible that females may also turn up on a future occasion. It would be rather interesting if some one would make the experiment of hybridising the two species artificially.

R. A. ROLFE.

PHAIUS × AMABILIS AND P. × MARTHÆ.

Flowers of these two beautiful hybrids, both of which have received First-class Certificates from the Royal Horticultural Society, have been sent by Messrs. F. Sander and Co., St. Albans, and afford evidence of the value of Phaius tuberculosus to the hybridist. P. × amabilis is a seedling from P. grandifolius, and was raised both by Messrs. Veitch and Messrs. Sander, the former flowering it first. The sepals and petals are blush-pink in front and white behind, while the lip, which most resembles P. tuberculosus in shape, is rich reddish purple, with a yellow line down the centre and a pale throat. P. × Marthæ was derived from the allied P. Blumei, and has lighter yellowish pink sepals and petals, a similar front lobe to the lip, but the side lobes and the throat broadly striped with reddish purple. The allied P. × Cooksoni, the first of the group, is an equally brilliant form, and has received a similar award—in fact, the three form a very charming trio. It was raised in the collection of Norman C. Cookson, Esq., from P. Wallichii, the pollen parent being P. tuberculosus, as in the two preceding cases. The miffy habit of this species is eliminated in the hybrid offspring, while the size and vigour of the other parents are brought down within reasonable limits, and the colour greatly enhanced. This is a particularly promising field for the hybridist, and we anticipate the advent of many other beautiful forms. Already we have P. × maculato-grandifolius, with its unique colour, and the brilliant P. × Owenianus, derived from P. bicolor and P. Humblotii, and when these are further intercrossed, and the blood of some of the brilliant Calanthes introduced into the group, some striking results may have to be recorded. And as they are so easily raised and cultivated, and so quickly reach the flowering stage, there is all the more inducement to take them in hand.

PIPE THERMOMETERS IN ORCHID HOUSES.

SINCE the commencement of this year, I have been carrying out some experiments to satisfy myself as to the maximum heat of the water in the hot-water pipes required to give the best results in the cultivation of Orchids, especially during the winter months, when there is very little sunshine, and we have to rely on pipe heat alone for the required temperatures. In order to experiment in this direction, I had two thermometers fixed in two of the mains connected with my boilers, these thermometers being specially made to screw into the pipes, so that the glass bulb of the thermometer (which is enclosed in a brass tube) projects into the water about an inch, and so registers the heat of the water accurately. I have taken my registrations three times a day during the month of January, and now send you the particulars, in the hope that the results may interest you. I send two sheets of registrations, the one from my warm Cypripedium house (in which I grow all the Cypripedes that require warm treatment), and the other from a Dendrobe house, where these Orchids are rested during the winter months. I think the sheets will explain themselves, but may say that the columns show the date, the conditions of the weather, the maximum day, and the minimum night temperature, out of doors, together with the morning, noon, and evening registrations of the heat of the water in the pipes, and of the atmosphere of the houses.

I may explain that my aim has been to obtain a maximum heat of 65° Fahr. in my Cypripedium house during the day, and a minimum of 60° during the night, while in the Dendrobe house 50° and 55° have been the minimum and maximum aimed at. So far as the results go, it would appear that 120° is the highest and most suitable heat of water to give the maximum of atmospheric heat, at noon, in the Cypripedium house, while a water heat of 115° will produce the required air temperature of 55° in the Dendrobium house. If the weather be sunny the air temperature is allowed to rise, or the water heat is lowered by closing the boiler damper, or shutting off a range of hot-water pipes.

I find that by means of these pipe thermometers the men have a much better idea how to manage their fires, while I can detect irregularities in stoking whenever I walk through the houses in which these thermometers are fixed. I purpose continuing these registrations during the present year.

O. O. WRIGLEY.

Bridge Hall, Bury.

[We omit the page of statistics, as the letter clearly explains the general principles, and details would naturally vary according to the situation of the house and the amount of piping in it. The value of the system appears to be that an intelligent stoker, by noting the fluctuations

of the outside atmosphere, and knowing the amount of heat in the pipes required to maintain a given temperature in the house, would be able to regulate the fires accordingly, without waiting until the thermometer in the house shows an increase or decline. The same thing is generally done by the rough-and-ready system of feeling the pipes with the hand, but Mr. Wrigley's system is far more accurate, and we can readily see its advantages. We shall be glad to hear the result of extended observations. —Ed.]

CALENDAR OF OPERATIONS FOR MARCH.

By H. A. Burberry, Highbury, Moor Green, Birmingham.

The sun is fast gaining power, the temperature of each department becomes nicely warmed, without the aid of much heat from the hot-water pipes, and the growing season may be said to have fairly commenced. Under these circumstances the temperatures must now be raised to the following figures :—

Cool House.—By day 55° to 60°, night 53° to 55°, morning 48° to 50°.

Intermediate House and Cattleya or Mexican House.—By day 65° to 70°, night 60° to 65°, morning 60°.

Warm or East Indian House.—By day 70° to 75°, night 65° to 70°, morning 65°.

The above figures may be taken as a guide, but I am well aware that this month is perhaps the most difficult of all in which to maintain a steady and regular temperature. Sometimes the bright sun causes the thermometer to indicate a much higher degree, but this will do no harm and should be endured, rather than put on too much air, which is at this period very searching. On the other hand, in the absence of sun the weather may sometimes be wintry, and then I would advise a temperature a few degrees below that quoted.

Damping down about three times a day in all departments will now be necessary, for the fire heat by night, combined with the sun by day, which is generally accompanied by drying winds, soon causes the atmosphere to become too dry, unless this precaution of damping down be taken. But do not merely put a can of water on the floor and think that sufficient; do it thoroughly well, by saturating between the pots, the stages, the walls, the floors, and in fact every space that can be damped without wetting the plants overhead.

Our attention should be now turned without delay to the important matter of shading. The cool Orchids, if in a light built house which is exposed to the sun's rays, will now require it, as also many of the warm house Orchids, which are partial to shade for a few hours during the day. Many are the kinds of shading employed, and various are the ways and

means of fixing them. Many growers have their own ideas and inventions, both as regards material and the speedy method of bringing it in and out of use. This is of course a necessity, for often there is some peculiarity or complication in the structure that requires to be specially dealt with. I would advise, firstly, that the shading be not permanent if it can possibly be avoided, but let it be placed so that it can be removed, or rolled up during the evenings and sunless days. Secondly, let the shading be of a suitable thickness for the plants which it is intended to cover. For cool Orchids, and all others preferring shade, it should be rather thickly woven; but for those only loving partial shade, such as most of the Cattleyas and Dendrobiums, it should be about half as thick; while for those loving more light, such as the Mexican Orchids, it should be very thin. Lath blinds are also now manufactured for the purpose of shading Orchid Houses, the space between each lath being determined according to the amount of shade required. These latter I have found extremely good and serviceable, and can highly recommend them. Thirdly, let the blinds, whatever kind they are, be raised if possible six inches at least from the glass roof of the house, for this is a great advantage in keeping the temperature cool during very hot weather.

The deciduous Calanthes should now be occupying a warm and dry position in the East Indian House, and but very little water given. It is not well to repot these Orchids too early; the beginning of next month will be soon enough. The roots push out then quicker, and are better able to take to the new soil while it is still fresh and sweet. If any of the plants gave signs of disease last season by showing black spots, they should now be shaken out of the old compost, and after being well cleaned, set upright on a layer of fresh sphagum moss on the stage, which may be slightly damped occasionally. This fresh moss underneath them seems to resuscitate and give them renewed strength, and new roots will soon push out, when they should be potted up. If any of the pseudobulbs are decayed, let the diseased portion be scraped clean away, and the wound dusted with powdered charcoal.

Towards the end of this or by the beginning of next month will also be early enough to repot Thunias. These should still occupy a dry place in a light position in the Mexican House, taking care that they get but very little water. Of course, if either Calanthes or Thunias have previously been kept wet or otherwise unduly excited, so as to cause early growth, which is already perhaps two or three inches long, the above remarks will not apply, and in such cases they should be potted up earlier, taking great care that both are kept on the dry side afterwards until the new growth is well up, and the plants nicely rooted. Lumpy peat and sphagnum moss in equal proportions mixed together is good for Thunias; the pots should be about half filled with crocks, and four or five strong

bulbs are enough for a 32 sized pot. They should always be grown fully exposed to the sun.

Calanthes require a compost with a little more body; and a little fibrous loam and leaf soil may be added to the above. The pots should be half drained, the remaining half being filled up with the compost to within half an inch of the rim. Into this fix the bulbs, and support them with sticks, one to a 48 or two bulbs to a 32 sized pot.

The winter or early spring-flowering Dendrobiums are now at their best, and as it is twelve months ago since we saw them, how beautiful and new they all appear again, in their garb of ever-varying delicate shades and tints, and what a remarkable number of different varieties there are now compared to only a few years ago! Those which have passed out of their flowering stage we are now examining, and doing all necessary repotting or top dressing, afterwards placing them in their proper growing quarters. Too much heat, however, need not yet be given, until we can rely more upon our fickle climate for assistance in the matter of natural heat. The greater number are now in bloom, but a good batch yet remains to come in, and these are now being gradually inured to more warmth and moisture, so that they will flower in a few weeks, and at the same time to ensure the best quality of blooms. Dendrobiums should have no check after once being started. I have often noticed that if they are again taken to a cooler house, in order to retard the opening of the flowers for any purpose, they usually come small in size and inferior in colour.

Much of the repotting and top-dressing in the East Indian House is now done. Many of the Angræcums will soon be flowering, and among them are A. citratum and A. Sanderianum, two truly beautiful and interesting species. It is generally easy enough to pick out the old moss from the roots, and supply fresh, without checking them in the least. This genus suffers more than any I know if the atmosphere is very dry or the plants kept too dry at the roots; also if allowed to become infested with yellow thrips or red spider. All the Phalænopses are also done, and rooting nicely into the fresh sphagnum, which should now be kept well moistened.

In addition to the Dendrobiums, which should be disposed of as they pass out of bloom, there are a number of other miscellaneous Orchids which should likewise have attention as they may want it, which will be chiefly during this and the following months. I refer to such plants as Catasetums, Eulophias, Stanhopeas, Mormodes, Cycnoches, Coryanthes, Spathoglottis, and Aganisias, which should all be cultivated in baskets, and suspended close to the roof glass, the usual fibrous peat and sphagnum moss being the most suitable compost. Then there are the Galeandras, of which the dwarf growing ones do best also in baskets; also the Cyrtopodiums. Some of the last two genera have very long pseudobulbs, and

pots are therefore more convenient. Cyrtopodiums, like species of Chysis, produce their flower spikes simultaneously with the young growth, which should be borne in mind, as they are better not disturbed for purposes of repotting until after flowering. The former are known to be very shy bloomers, and on that account should be kept short of water, and placed near the glass, which will probably induce the spikes to appear. Should they fail to do so give the plants a liberal treatment, for large bulbs are necessary to ensure free flowering.

Habenaria carnea and H. militaris will now push new growth, and must be repotted. Keep them in small pots, and employ a compost of fibrous loam, fibrous peat, and chopped sphagnum moss, in equal parts, freely intermixed with finely broken crocks. Drain the pots to about one-half their depth, set the tubers singly upon the crocks, and fill in round with the compost, pressing it down rather firmly. When finished off let the crown of the tuber be slightly below the surface of the compost. Water very carefully indeed until the plants have made some growth.

This is a good month in which to go through the Mexican house Orchids, well cleaning the Lælias and giving them the necessary attention as regards repotting and top dressing. A plant, if properly watered and attended to, should last in many cases three years without again being taken right out. Indeed, they will go longer, and still do fairly well. But it is far the best practice not to let the plants become exhausted through neglect in this matter, for when so they rarely ever regain their former health and strength. There is no doubt that all of this family of short bulbed Lælias are most at home in hanging baskets, but they also grow well in pots on the stages if raised up near to the light.

There is but little repotting just at present in the Cattleya or Intermediate houses. Some of the earliest to bloom of Cattleya Trianæ will be emitting new roots, which should then be potted, if necessary.

Cattleya Warscewiczii (gigas) will be starting to grow, but must not be repotted until growth is finished, about August, and the same may be said respecting C. Warneri and Lælia Boothiana. Water them very sparingly indeed until the new growths are three or four inches long, and they will then flower more freely than if kept too abundantly supplied with water from the first.

Cœlogynes rarely come up to a high standard of excellence if not given plenty of light and water when growing, and a thorough rest when inactive. They may then be kept so dry as to shrivel to some extent, a thing which cannot be done with many Orchids. C. cristata, perhaps the best and most useful of all, delights in a cool dry rest from the time growth is finished, and if treated so it should be in full beauty at this date. The Cattleya or Mexican houses are the best in which to grow the majority of Cœlogynes. Such species as C. Massangeana, C. fucescens, C. corrugata, C. barbata, C.

ocellata, and C. Sanderiana delight therein, growing better in more air and sun than when in greater heat. There are a few, however, that I think do better in the East Indian house, and these are C. speciosa, C. Parishii, C. asperata, and C. Dayana.

The Lycastes appear not to be blooming so well this year, and are later in doing so. I have no doubt the previous summer has much to do with this; indeed, if it cannot be accounted for in this way, it is difficult to do so at all, for every succeeding year it may be noticed how one or another plant has done better or worse than previously, and the difference is often connected with peculiarities in the seasons.

In the Cool house a start may be made by going through the Odontoglossum crispums, and others that have done blooming, and repotting them if necessary, and this system should be continued throughout the spring and summer months. Very few O. crispums are in flower now, but it is the proper time for O. triumphans, and these are therefore at their best, as is also that pretty little O. Cervantesii, which should be grown in quantity. It is cheap and very easy to grow, and the flowering season ranges from November to May. It occupies but little space, and is best suited if suspended in small pans. Like O. Rossii, it is somewhat averse to root disturbance, and this should therefore be avoided as much as possible.

O. Edwardii and O. ramosissimum are others now in bloom, and are very acceptable for this season. The buds of the latter have a peculiar habit when opening of getting the lips of the sepals and petals stuck together, and occasionally require assistance, though they usually separate in due time.

Should the Masdevallias of the Harryana type not be in good condition, and consequently promise to bloom unsatisfactorily—Masdevallias to look well should be a mass of flowers—the flowers should be foregone, and the plants should undergo a thorough repotting. This is really the very best season to do it, although it does not seem quite right to disturb the plant if it is to carry a heavy crop of flowers soon afterwards, and in such a case it is better to let it flower first, but even if repotted the plant would still flower, and would not suffer nearly so much as one would suppose. Lumpy peat and sphagnum moss is the best compost, and the pots should be drained half their depth. The compost must be pressed down moderately firm, and the plant made secure against shaking about by the aid of sticks. This last is a most important matter.

Seedling Dendrobiums and Cattleyas must now receive attention, and at once be put right for growing, so that they may enjoy the full advantage of a long season of activity. Keep them in comparatively small pots, but give them fresh material, if possible. They are at all times best if kept well up to the roof glass, but not too much exposed to the direct rays of the sun, or damage may be done to the tiny little plants that may never be retrieved.

The extremely cold weather which we have lately passed through will, I have no doubt, have left its lessons behind, few or many, large or small. I can only hope that all Orchid growers have emerged triumphantly, or to say the least, without serious results, though in this I have some misgiving. I hope, however, that the advantages gained by extra experience will outweigh the disadvantages of any probable loss incurred. Many cultural secrets have been divulged during such severe weather which would probably never have transpired in its absence. But the principal lessons I have no doubt have tended towards the detection of defects in the heating apparatus, or for the better construction of the houses, and such if carried out would have their advantages. Certainly those having a superabundance of boiler power, or of hot-water pipes round the houses, will have been far the better off during the protracted spell of cold.

ORCHID PORTRAITS.

CATASETUM BUNGEROTHII, N. E. Br., VAR. AURANTIACUM, Cogn.—*Lindenia*, x. p. 57, t. 459.

CATASETUM IMPERIALE, L. Lind. and Cogn.—*Lindenia*, x. p. 59, t. 460; *Journ. des Orch.*, Feb. 1, p. 346, with fig.

CATASETUM LINDENI, Cogn.—*Lindenia*, x. p. 45, t. 453; *Journ. des Orch.*, Feb. 1, p. 346, with fig.

CATASETUM LUCIANI, Cogn.—*Lindenia*, x. p. 47, t. 454.

CATASETUM MIRABILE, Cogn.—*Lindenia*, x. p. 55, t. 458; *Journ. des Orch.*, Feb. 1, p. 346, with fig.

CATASETUM SPLENDENS, Cogn., VAR. ALBUM, L. Lind. and Cogn.—*Lindenia*, x. p. 49, t. 455.

CATASETUM SPLENDENS, VAR. ALICIÆ, L. Lind. and Cogn.—*Lindenia*, x. p. 53, t. 457.

CATASETUM SPLENDENS, VAR. ATROPURPUREUM, Cogn.—*Lindenia*, x. p. 51, t. 456.

CŒLOGYNE CRISTATA, Lindl.—*Orchid Album*, xi. t. 501.

CYPRIPEDIUM × MADAME JULES HYE.—*Gard. Chron.*, Jan. 28, p. 103, fig. 14.

CYPRIPEDIUM × MRS. FRED. HARDY.—*Gard. Chron.*, Jan. 26, p. 111, fig. 16; *Journ. of Hort.*, Feb. 7, p. 111, fig. 18.

CYPRIPEDIUM × YVONNÆ.—*Ill. Hort.*, Jan. 30, p. 23, t. 26. A good form of C. × Leeanum, very near C. × L. giganteum.

LÆLIA ANCEPS CRAWSHAYANA.—*Gard. Mag.*, Jan. 26, p. 45, with fig.

LÆLIO-CATTLEYA × DECIA.—*Journ. of Hort.*, Feb. 14, pp. 130, 131, fig. 21.

ONCIDIUM AMPLIATUM MAJUS.—*Gard. Chron.*, Feb. 9, pp. 172, 173, fig. 26.

PHAIUS GRANDIFOLIUS, Lour.—*Orchid Album*, xi. t. 502.

PHALÆNOPSIS MARIÆ.—*Journ. of Hort.*, Jan. 31, p. 89, fig. 15.

PHALÆNOPSIS × YOUNGIANA.—*Gard. Mag.*, Feb. 16, p. 101, with fig.

PLEIONE LAGENARIA, Lindl.—*Orchid Album*, xi. t. 503, fig. 2.

PLEIONE MACULATA, Lindl.—*Orchid Album*, xi. t. 503, fig. 1.

SOPHRO-CATTLEYA × EXIMIA.—*Gard. Mag.*, Feb. 9, p. 83, with fig.

SOPHRONITIS GRANDIFLORA, Lindl.—*Orchid Album*, xi. t. 504.

CONTINENTAL NOTES.

BY CH. DE BOSSCHERE.

THE January horticultural meetings both at Gand and Brussels had to be suspended on account of the cold, as was also the case with the February meeting of the latter. The Gand meeting on February 3rd was only prevented from being a blank by the ingenious contrivance of M. Jules Hye, who has constructed a kind of carriage in which to convey his precious Orchids. Owing to this fact we were able to admire a series of thirteen beautiful hybrid Cypripediums, of which eleven were derived from C. Spicerianum ♀ crossed with C. × Sallieri Hyeanum ♂. They are very charming forms, and bear a very decided stamp of their origin. The two other brilliant forms were derived from C. Spicerianum and C. Boxallii.

In the establishment of M. Ch. Vuylesteke of Loochristy is a splendid hybrid derived from Cypripedium Hookeræ ♀ and C. Harrisianum ♂, called C. × Loochristianum. It is very vigorous, the foliage very beautiful, and the flower large and brilliantly coloured.

M. Ch. Van Wambeke has in flower at the present time fine varieties of Odontoglossum Hallii and O. cirrhosum, also a very dark form of Lælia anceps.

At the Horticulture Internationale we observed a good Cattleya maxima, the beautiful Cypripedium × Claudii, a number of C. Argus, Vandas, and Lælia anceps Ballantineana, and L. a. Hyeana.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

AT the meeting of the Royal Horticultural Society, held at the Drill Hall, James Street, Westminster, on February 12th, the exhibits consisted almost entirely of cut spikes, on account of the severe weather, and a few of these

got frozen in transit. The display, however, was better than might have been expected, under the circumstances, and several very good things were shown.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent a group of fine things, to which a Silver Banksian Medal was awarded. First and foremost may be mentioned the fine natural hybrid Phalænopsis × Youngii, which we are inclined to think is a variety of P. × leucorrhoda. It has large white flowers flushed with pink at the base of the sepals and petals, while the lip and inner halves of the lateral sepals are dotted with red-purple spots. A First-class Certificate was awarded to it. A Cultural Commendation was also given to a fine spike of Odontoglossum coronarium. The handsome Calanthe × Baron Schröder, perhaps the darkest form known, was also exhibited, together with four forms of C. Regnieri, Phaio-calanthe × Sedeni, P.-c. × Arnoldiæ, Catasetum barbatum, Arachnanthe Cathcartii, and several Cypripediums, including C. Charlesworthii, C. insigne Sanderianum, C. × Lathamianum, C. × Calypso, C. × Harrisianum superbum, and C. × Sallieri.

Lord Rothschild, Tring Park (gr. Mr. Hill), sent a splendid panicle of Phalænopsis × intermedia Portei, with six branches, and about fifty flowers, to which both a First-class Certificate and a Cultural Commendation were given. He also sent a fine inflorescence of Lælia superbiens.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent a fine spike of Odontoglossum coronarium miniatum, to which a Cultural Commendation was given.

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. Young), exhibited Stauropsis gigantea, Lælia præstans, Cypripedium Rothschildianum, C. × Wiganianum, and C. × Lathamianum.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford), sent a series of fine varieties of Cattleya Trianæ and C. Percivaliana, one called C. P. magnifica being particularly fine. Other things exhibited were Phalænopsis Schilleriana, P. Stuartiana, and Dendrobium × Schneiderianum.

F. M. Burton, Esq., Highfield, Gainsborough, sent Cypripedium × pavoninum, and C. × suffusum.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), exhibited a fine spotted variety of Odontoglossum crispum, called "La Gascogne," the red-brown spots on the sepals being larger than those of the petals.

G. Marshall, Esq., Claremont House, Grimsby (gr. Mr. Johnson), sent flowers of Cattleya Trianæ.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), sent some good Cattleyas and Odontoglossums, which, like the preceding exhibit, got frozen in transit.

Walter C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), sent Odontoglossum maculatum, Dendrobium Dalhousieanum, said to have

flowered twice in seven months, Lælia harpophylla, and a fine variety called L. h. Claudii, Selenipedium × grande, and Cypripedium Rothschildianum.

Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, received an Award of Merit for Calanthe × Masuco-tricarinata (C. tricarinata ♀ × C. Masuca ♂), a very pretty hybrid, the white flowers being suffused with lilac, and an inch in diameter. A fine Cymbidium × eburneo-Lowianum superbum also received a First-class Certificate.

Messrs. F. Sander and Co., St. Albans, sent several fine things, including Lælia anceps Schroederiana, Phaius × amabilis, and P. × Marthæ, Dendrobium luteolum, and D. l. superbum, the pretty D. canaliculatum, Odontoglossum × Coradinei albanense, a large and prettily spotted form, and Cypripedium × Fordianum, a fine hybrid derived from C. Stonei ♀ and C. callosum ♂.

Messrs. W. L. Lewis and Co., Southgate, sent a pretty form of Cattleya Trianæ called C. T. Ashtoni, with a broad lip of purple-crimson tint.

Mr. H. Chapman, gardener to R. I. Measures, Esq., Cambridge Lodge, Camberwell, exhibited a very fine series of over fifty dried flowers of Orchids, mounted in picture form, and the colours very well preserved. A Silver Banksian Medal was awarded to the group.

M. Seavy, photographic artist, 164, Camberwell New Road, S.E., exhibited a collection of beautiful photographs of Orchids, to which a Bronze Banksian Medal was given. The workmanship was excellent, and it is hardly necessary to add that both the shape and details of the flowers were correctly represented. We may add that our illustration of Cypripedium × Buchanianum magnificum given on page 81, and of C. insigne Sanderæ given at page 41 of the last volume were prepared from photographs taken by this artist.

CORRESPONDENCE, &c.

H. J. R., Florence. Cattleya Lueddemanniana. The Cypripedium may be a form of C. × Swanianum.

Alpha. "Lælia anceps morada." A series of dark forms ("morada" being a Spanish word meaning dark) introduced by the Liverpool Horticultural Society some time ago. All the forms from this locality are said to be coloured. We will try to note them carefully another season. Odontoglossum cordatum, O. luteopurpureum var. sceptrum, Cattleya Trianæ, and Dendrobium Wardianum Lowii, all good forms.

T. A., West Derby. Epidendrum cochleatum. The Cypripedium appears to be a form of C. × Daviesianum.

S. M., York. Many thanks; next month.

W. H. S., Northwich. Dendrobium speciosum.

The catalogue of Messrs. F. Sander and Co., just received, contains figures of several of their recent hybrids, also a reproduction of the photograph of the beautiful Miltonia × Bleuana nobilior.

We have also received the Catalogue of Messrs. W. L. Lewis and Co., of Southgate, containing a good selection of Orchids.

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DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

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NOTES.

Two meetings of the Royal Horticultural Society will be held during April, on the 9th and 23rd respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

The February number of the *Kew Bulletin* contains a thirteenth Decade of New Orchids, described by Mr. Rolfe, which are more particularly noted in another column.

Flowers of the rare and beautiful albino, Dendrobium Wardianum candidum, have been received from O. O. Wrigley, Esq., Bridge Hall, Bury. It differs from the type in having lost the pink tips to the sepals, petals, and lip, the yellow disk and maroon blotches being normal. It is a very charming variety.

Cypripedium villosum giganteum is an exceptionally fine form sent by E. H. Woodall, Esq., of Scarborough, and being constant in character deserves a varietal name. Both the dorsal sepal and petals are three and a half inches long, the former over and the latter slightly under two inches broad. In colour it approaches C. v. aureum, sent with it. Both came from the fine collection of Edward Salt, Esq., which was dispersed about two years ago.

A note in a recent number of the *Journal des Orchidées* (p. 359) describes the male flowers of Cycnoches chlorochilon as very rare. in this aspect differing from other species, in which it is the female which is so seldom seen; and it further observes that these differences are truly remarkable and, at present, inexplicable. The idea is, however, erroneous, as C. chlorochilon is in no way different from other species in this respect. In fact, the males are common, and had been known for over half a century before we have any record of the occurrence of females.

Another part of Fitzgerald's *Australian Orchids* has just appeared, containing figures of several remarkable terrestrial species, together with

Dendrobium bigibbum, Cirrhopetalum clavigerum, Phaius grandifolius, P. Bernaysii, &c. The issue of this valuable work was interrupted by the death of the author over two years ago, but as it was felt that Mr. Fitzgerald's unpublished drawings were too valuable to be lost, the New South Wales Government consented to continue the work, with the help of Mr. A. J. Stops as lithograper, and Mr. H. Deane, F.L.S., who contributed the letterpress.

The list of hybrid Cypripediums mentioned in our February issue has been re-arranged by Mr. H. Chapman, the parents being placed alphabetically in two columns, with the offspring in a third one—thus being very handy for reference. The list appears in the *Gardeners' Chronicle* for February 16th. On testing it with a list compiled from original records, however, we regret to find a large number of discrepancies.

Le Jardin for March 5th (p. 53) contains a list by M. H. Martinet of the principal hybrid Cypripediums raised in France, with their parentage, raisers, and a reference to the original descriptions. It is intended to supplement the *Gardeners' Chronicle* list—in which the origin of hybrids raised abroad is vaguely indicated as "Continental"—and is reproduced in that journal for March 23rd (p. 370). A few, however, are practically synonymous with forms previously raised in England.

The *Revue Horticole* for February 1st (p. 63) contains a list of the principal hybrid Orchids raised during 1894, compiled by M. Ch. Moran.

Cypripedium insigne is extensively grown in the collection of W. S. Kimball, Esq., Rochester, New York. *American Gardening* for February 23rd gives a figure reproduced from a photograph of a house fifty feet long by twenty feet broad, containing over four thousand flowers.

C. Winn, Esq., Selly Hill, Birmingham, sends flowers of a brilliantly-coloured hybrid Dendrobrium, raised by himself from D. nobile nobilius ♀ and D. × splendidissimum grandiflorum ♂, and which we think is a form of D. × Rubens, both the parentage and flower being very similar. It is large and very brilliantly coloured.

A very fine flower of Cattleya Lueddemaniana Roeblingiana from the collection of C. G. Roebling, Esq., Trenton, N. Jersey, arrives in almost perfect condition, in spite of its long journey across the Atlantic. The petals are over four inches long by $2\frac{1}{2}$ inches broad, and light blush pink with a purple stain along the middle of the upper half. The lip is $3\frac{1}{2}$ inches long, and the front lobe rich purple crimson, the side lobes being light blush, like the sepals and petals.

Some fine Cypripediums also come from the same collection. C. insigne Roeblingiana is a handsome variety with the shape and colour almost of C. i. Mooreanum, but the spots on the dorsal sepal are small and very numerous, only measuring half-an-inch in diameter. C. × Leeanum Clinkaberryanum has the dorsal sepal 2½ inches broad, with numerous small spots on the disc, which are arranged somewhat in lines. C. × Sallieri Roeblingianum is a very richly coloured and handsome form, the dorsal sepal having the disc marbled with warm brown on a yellow ground, and the margin white. The petals and lips are also warm shining brown.

E. A. Beveis, Esq., Oxford, sends a fine inflorescence of Cattleya aurantiaca with ten rich orange-coloured flowers, spotted and streaked with crimson on the lip, and quite perfect. It was obtained at one of Messrs. Protheroe & Morris's sales about seven years ago with some pieces of C. Skinneri, and has now fifteen bulbs and five leads, all of them flowering, as it does regularly every year. E. H. Woodall, Esq., Scarborough, also writes that the flowers open well with him each year. H. J. Ross, Esq., Florence, also alludes to the note at page 83, stating that he intends to use the pollen for fertilising C. Skinneri, in the hope of obtaining the beautiful hybrid C. × guatemalensis. The cross might be attempted both ways.

A singular flower of Cypripedium × Thibautianum is sent by H. J. Ross, Esq., of Florence, in which the lip is completely wanting, though in other respects it is quite normal. The peculiarity seems to have become fixed, for last year the plant bore two flowers which had precisely the same character. There are two buds yet to open, and to all appearances will prove identical.

A flower of the interesting and very pretty generic hybrid Epilælia × Hardyana has been received from Messrs. F. Sander & Co. The sepals and petals are light blush, and the front lobe of the lip brilliant rose-purple. It was described at page 364 of our last volume. Other experiments with Epidendrum ciliare should be made.

O. O. Wrigley, Esq., sends us further notes on his Pipe-thermometers, which were described at page 87, including the temperatures for the month of February. He considers that the system has been fairly tested during the late severe weather, and that never, in all his experience, have his men had so little difficulty in keeping up the proper temperatures, which he attributes to their always being able to see the exact temperature of the water in the pipes, and stoke the fires accordingly. In the Dendrobium house an additional thermometer was hung up at about 8½ ft. from the floor, where the Dendrobiums were hanging at rest, and this invariably

indicated four to five degrees higher temperature than the one hung at the ordinary level, a difference which would probably be found to exist in most cases.

A flower of the very pretty albino, Dendrobium Findlayanum album, has been sent by E. Ashworth, Esq., Harefield Hall, Wilmslow, in which the whole flower is white with the exception of the yellow disc. It is typical in other respects.

A species of Sophronitis, from Paraguay, sold some time ago by Messrs. F. Sander & Co. without name, proves to be S. pterocarpa, Lindl., a plant having flowered in the collection of W. E. Ledger, Esq., of Wimbledon. It is much like S. cernua, Lindl., but the pseudobulbs are much stouter, the leaves broader, and the flowers rather larger, though very similar in colour. The pretty little S. violacea has also flowered in the same collection.

Eulophiella Elisabethæ, mentioned at page 66, is now flowering in several English collections, and proves to be very distinct and attractive, its graceful sprays of white flowers being very effective. The flowers are very sweetly-scented, something like narcissus.

Catasetum Randii, described on page 37, is now flowering in the Kew collection, and is much like a miniature edition of C. barbatum. The crest, however, consists of a brush-like tuft of filaments instead of a single curved tooth, in which respect it differs from all others. The flowers are all males.

The charming little South European Orchis Brancifortii is now flowering in the collection of H. J. Elwes, Esq., Colesborne, Gloucestershire, its graceful racemes of light purple blossoms being very attractive.

OBITUARY.

We regret to hear of the death of G. D. Owen, Esq., of Selwood, Rotherham, which took place suddenly on February 22nd last, his age being 52. As our readers are aware, Mr. Owen was a great lover of Orchids, and the possessor of a very fine collection, which we had the pleasure of inspecting last summer. Cattleyas and Odontoglossums we found represented in quantity, and a fine series in flower, including many choice varieties; also a nice lot of Dendrobiums, and a good selection of other showy Orchids—all being exceedingly well grown by Mr. M. Watts, Mr. Owen's gardener. Among plants dedicated to Mr. Owen, we may recall Lælia × Oweniana, Dendrobium × chlorostele Owenianum, and the handsome Phaius × Owenianus, all of which have been described in our pages.

DIES ORCHIDIANÆ.

WITH the return of genial weather the last meeting of the Royal Horticultural Society resumed its wonted brilliancy, an excellent show of Orchids being brought together. Several plants of Eulophiella Elisabethæ attracted a good deal of attention, and a group of three received a Cultural Commendation. It is very distinct and attractive, and apparently succeeds well under warm treatment. Dendrobriums were very well shown, especially the hybrids, and one remarkable novelty came in for a First-class Certificate. This was Mr. Cypher's D. × Apollo grandiflorum, raised from D. nobile pulcherrimum ♀ and D. × splendidissimum grandiflorum ♂, which was generally considered as being a marked advance on its brillant parents, and some remarked that it was difficult to see where further improvement was possible.

The *Journal of Horticulture*, in publishing a figure of a flower, remarked that "opinions were unanimous that this variety . . . was the finest that had been seen, both with regard for size and coloration. . . . The size of the lip was almost phenomenal, and is, perhaps, the best point about the hybrid." The figure shows a flower four and a half inches across its widest diameter, and the lip an inch and a half broad. Now I was much struck with the flower in question, and had the curiosity to measure it and note down the dimensions. Will it be believed? I find on comparing the two that the artist has magnified the width of the flower by fully half an inch, and that of the lip by half this amount. Probably the majority of readers would assume the figure to be correct, especially after reading the note about it. Such exaggeration is misleading, and ought to be discountenanced. Some time ago I used some strong language respecting a caricature of Odontoglossum crispum apiatum, and since then three figures of a Cypripedium have appeared, all drawn from one and the same flower, yet so diverse that they might represent three different species. The fact is, too many figures which appear are absolute caricatures, and in some cases almost worthless as a means of identification, a condition of things which is certainly deplorable, and might so easily be avoided, at all events so far as exaggeration is concerned.

The remarks made in the preceding paragraph are in no sense depreciatory of Mr. Cypher's handsome hybrid, but only of the want of accuracy in the published figure. On the contrary, its occurrence points to the steady improvement which is going on, and which we believe is likely to continue. In the hands of the Hybridist the materials used seem to become plastic, and may be almost moulded at will—that is within certain limits, which, however, cannot be accurately defined beforehand. The one certain thing is that improvements can be effected in various directions by judicious combinations—improvements in habit, in size and colour of flowers, in floriferousness, in short in almost any particular in which improvement

may seem desirable, but it must be accompanied by judicious selection and weeding out of worthless forms, which will certainly be numerous. Such improvements as the one in question will only stimulate our Hybridists to renewed exertions.

ARGUS.

THE HYBRIDIST.

Dendrobium × Apollo grandiflorum.

This magnificent hybrid was raised in the establishment of Mr. James Cypher, Queen's Road Nursery, Cheltenham, from Dendrobium nobile pulcherrimum ♀ and D × splendidissimum grandiflorum ♂, and received a First-class Certificate from the Royal Horticultural Society on March 12th. The flower measures nearly four inches across its broadest diameter, the petals being $1\frac{1}{8}$ inch and the lip $1\frac{1}{4}$ inch broad (the measurements taken without being artificially flattened out). The sepals are light blush with rosy purple apex, the petals white tipped with rosy purple, and the lip has a very broad slightly-feathered maroon disc, and a light rosy purple margin, except just behind the apex, where it is nearly white. It is of exceptional size, very beautifully coloured, and marks a distinct advance in this useful group.

Dendrobium × Rubens grandiflorum.

A large and brillantly coloured hybrid, raised in the same establishment as the preceding, from D. × splendidissimum grandiflorum and D. nobile nobilius. The petals are $1\frac{1}{8}$ inch broad, and measure $3\frac{3}{4}$ inches from tip to tip. Their colour and that of the sepals is bright rose-purple, a little paler at the base. The lip is as broad as the petals, and bears a large feathered maroon blotch with a light blush border, the rose-purple nerves extending to the margin on either side. The sepals and petals are very flat, but the lip stands out in front of the flower more than in many of its allies. The brilliant colour recalls D. nobile nobilius. It is a very handsome form.

Selenipedium × Finetianum.

We are soon called upon to supplement the list of hybrid Selenipediums given at page 75, by a handsome form from the collection of M. F. Finet, of Argenteuil, France, received through Messrs. F. Sander & Co. It was obtained by crossing S. × cardinale ♀ and S. caudatum ♂, and well combines the characters of its two parents. The dorsal sepal is over $2\frac{1}{2}$ inches long, the colour light straw suffused with faint pink. The petals are drooping, over $4\frac{1}{2}$ inches long, light rose-pink in the basal portions, but light rose at the apex, and for some distance along the apical margins, with numerous rose-purple hairs at the base. The lip is nearly two inches long, bright rose-purple in front, paler behind, where, and on the side lobes, it is prettily spotted with rose-purple; the staminode light yellow, with a

slightly hairy rose-purple margin, and a little light rose suffusion in front. It is a very interesting addition to the group.

Lælio-Cattleya × Myra.

A distinct and very pretty hybrid, raised from Cattleya Trianæ ♀ and Lælia flava ♂, by Messrs. James Veitch & Sons, which received an Award of Merit from the Royal Horticultural Society on March 12th. The flower is about intermediate in size and shape, and the colour primrose yellow with a brighter yellow disc. The plant is at present very small, and will probably improve greatly in another season or two.

Dendrobium × Ainsworthii intertextum.

This very pretty variety was raised by Messrs. James Veitch & Sons from Dendrobium nobile ♀, and what is known as Lee's variety of D. aureum ♂. The flowers are waxy white, with a slight tendency towards cream-colour in the petals, and a little primrose yellow surrounding the feathered maroon disc. It is large and handsome, the flower being over three inches across, and the petals eleven lines broad.

CATTLEYA TRIANÆ ARKLEANA.

In collecting together the varieties of Cattleya Trianæ given on another page, we did not find one in which the colour of the front lobe of the lip was so rich, and extended so far back in the throat as to completely obliterate the yellow blotch, nor do we ever remember to have seen such a one. A plant in the collection of John W. Arkle, Esq., Holly Mount, West Derby, Liverpool, now flowering for the first time, possesses precisely this character. The flower sent is of perfect form, the petals fully two and a half inches broad and comparatively short, their colour and that of the sepals and base of the lip beautiful blush pink, while the apical half of the lip is of a glowing purple-crimson, this colour extending right round the side lobes and back into the throat, completely obliterating the yellow blotch so characteristic of this species. The lip is well expanded in front, beautifully undulate, and measures just two inches across. The basal half of the throat is nearly white, like the column, with some deep yellow and crimson lines down the centre. It is a variety of exceptional brilliancy.

ONCIDIUM VARICOSUM ROGERSII.

A note appears in a recent number of *American Gardening* (p. 74), by Mr. R. M. Grey, on a new variety of Oncidium varicosum, called southorangense, which differs from the type in its greater size, the flowers measuring over two inches in diameter. This is precisely the character of the variety Rogersii, which originally appeared in the collection of Dr. Rogers, of East

Grinstead, and received a First-class Certificate from the Royal Horticultural Society in December, 1868. Other plants of this superb variety have since appeared, but none quite equal to the original one, whose lip measures over two and a quarter inches across in a dried state. It is quite evident that the form which has now appeared across the water is the above fine old variety, which still remains somewhat rare in cultivation. It has been known to bear as many as one hundred and seventy of its splendid flowers on the same inflorescence.

A MONOGRAPH OF ODONTOGLOSSUM CRISPUM.

De Barri Crawshay, Esq., Rosefield, Sevenoaks, informs us of his intention to publish an illustrated Monograph of Odontoglossum crispum, and its numerous varieties, and would be much obliged if those who possess fine varieties would forward him a flower, and, if possible, a photograph of the whole spike. Mr. Crawshay wishes to give a series of faithful portraits of the principal forms, and describes his method of sketching as follows:—After cutting a way the ovary he pins the flower down on the paper and then traces the actual margin, filling in the details and markings afterwards. The chief objection which we can see to the method is that the flattening destroys the perspective of the flower, and considerably alters its appearance, though it in no way affects the value of the drawing as a means of identification. Mr. Crawshay hopes to be able to complete the work, and issue it next autumn. We heartily welcome the project, and hope to see it brought to a successful termination.

BULBOPHYLLUM GRANDIFLORUM.

The very remarkable Bulbophyllum grandiflorum, the giant of the genus, has at last appeared in cultivation, having been exhibited by Sir Trevor Lawrence at the Royal Horticultural Society's meeting on March 26th, under the name of B. burfordiense, and received a Botanical Certificate. It was described and figured in 1848 by Blume (*Rumphia*, iv., p. 42, tt. 195, fig. 3, 199, fig. B.) from specimens collected by Zippelius in woods on the coast of New Guinea, its author remarking that the flower was the largest known in the genus, a statement which holds good to the present day. The dorsal sepal of the flower exhibited measures $4\frac{1}{2}$ inches long by over 2 inches broad, the colour being a peculiar light greenish brown, with a number of white blotches between the nerves, chiefly on the basal half. The lateral sepals are over $3\frac{1}{2}$ inches long by $\frac{3}{4}$ inch broad, rather lighter in colour, and unspotted. The petals are remarkably small, being only $1\frac{1}{2}$ lines long, and light green in colour. The lip is laterally flattened in front but broader behind, the margins of the side lobes ciliate, the whole three lines long. It is attached underneath, about the middle, by a slender

membrane, and so delicately balanced as to rock backwards and forwards on the slightest touch. The colour is light green with brownish margin, and some dull purple spots at the sides. The face of the very short column is covered with minute brown dots, also the base of the lateral sepals. The plant has the usual creeping habit of the genus, one-leaved pseudo-bulbs, and solitary-flowered scapes about eight or nine inches long. It is said to have been obtained from Messrs. Linden, in 1887. The species was said to have been introduced to cultivation some years ago, but the evidence rests on a misidentification of Reichenbach's, and the species figured in *Lindenia* iii., p. 27, t. 108 (B. grandiflorum, Rchb. f., not of Blume) requires a new name; it may, therefore, be called B. longisepalum, in allusion to its long attenuated sepals. It also belongs to the section Sarcopodium, and is a native of New Guinea. R. A. R.

BRASSAVOLA CUSPIDATA.

A plant of the very remarkable Brassavola cuspidata, Hook., has flowered in the collection of Dr. G. M. Lowe, Castle Hill House, Lincoln. The habit is pendulous, and the leaves are much like those of a small Scuticaria. The pedicelled ovary is no less than $7\frac{3}{4}$ inches long, the sepals and petals narrowly lanceolate, long acuminate, and rather less than half as long, and the lip with a cordate, much-fringed basal portion, and a long acuminate apex. The colour is white. Like other species of the genus, it may be grown on a block suspended from the roof in the warm house, no shade being required. The plants should be well watered during the growing season, but the leaves being succulent, a much smaller amount suffices when at rest. The present species is very rare in cultivation, but is very interesting on account of its remarkable flowers.

CYPRIPEDIUM INSIGNE PULCHELLUM.

A very pretty variety of Cypripedium insigne has recently been received from Mr. H. T. Clinkaberry, gardener to C. J. Roebling, Esq., Trenton, New Jersey, which is quite distinct from anything given in the list at page 8. It was received by Mr. Föstermann in a consignment sent from the Khasia Hills by his collector, Massmann, and has now flowered for the first time in cultivation. It is allied to C. i. albomaculatum, the dorsal sepal being yellow with a narrow white margin all round. On either side of the midrib are situated two rows of small brown spots, and outside these two more rows of minute dots. The largest spots are only a line broad, and the majority very minute and numerous towards the base. The front of the lip and superior halves of the petals are bright brown, the remainder being nearly yellow. The flower is medium-sized, and in other respects typical.

CATASETUM WARSCEWICZII.

This extremely rare and interesting Catasetum has just flowered in Messrs. F. Sander & Co.'s Bruges establishment. It was originally discovered by Warscewicz, but introduced by Mr. Skinner, from Panama, and flowered in the collection of J. D. Llewelyn, Esq., at Penllergare, in April, 1850. It was described and figured by Lindley (*Paxt. Fl. Gard.*, i., p. 45, fig. 29), who remarked:—" This has found its way into cultivation under the name of Warczewitzia, Mr. Skinner having supposed the genus to be new, and desiring to give it to the bold and indefatigable naturalist who discovered it. We quite agree with Mr. Skinner that if patience and unwearied industry, courage that never quails before danger, and enthusiasm which despises difficulty, should give a naturalist a claim to a genus, Mr. Warczewitz most eminently has one. But he must wait for another opportunity, the plant that was given him being undoubtedly a Catasetum, and nearly related to C. discolor. As a species it is perfectly distinct from all others; the flowers, which grow in a close pendulous raceme, consist of roundish ovate sepals and petals, and a helmeted lip which spreads into a thin three-lobed limb, the middle lobe of which divides into two diverging fringed halves. They are pale green, with bright emerald green veins, and though not gaudy are extremely pretty. Their charm consists, however, in their delicious fragrance, which is quite equal to that of Aërides odoratum." It grows in mangrove swamps, on the branches of Rhizophora, and the racemes bear from eight to eleven flowers. Although not a distinct genus, it belongs to a small and very distinct section of Catasetum, characterised by the male flowers being without antennæ. C. Russellianum is probably the only other member of the group now in cultivation. One pretty little species is C. roseum, Rchb. f., a native of Brazil, which flowered with the Rev. John Clowes, in 1845, and which Lindley made into a distinct genus under the name of Clowesia rosea (*Bot. Reg.*, 1845, t. 39). There are some half-a-dozen others still very imperfectly known. The female flowers of this section are still unknown.

R. A. R.

DENDROBIUM NOBILE ALBIFLORUM.

I send you flowers of Dendrobium nobile Schrœderianum and D. n. Cypheri, which you will see are identical, and we have bloomed the same thing under the name of D. n. albiflorum. Will you please say which is correct? It is a pity that varietal names should be given in this way, and very confusing to those who like to have them correct. Varietal names are, in my opinion, far too numerous with many species. In the case of D. nobile there are, no doubt, several which richly deserve a varietal name, and perhaps the enclosed is one of them. The recent importations have, I believe, yielded many varieties of great merit in many collections. It has been so here, but the only one which we have given a name to is a very

dark and heavily-flaked variety, but I have since been told that it is already known under another name. This, however, we hope soon to prove by flowering the two plants. The present system of naming varieties so freely seems to be open to objection, though I am not prepared to offer suggestions which would remedy the existing confusion. Buying named varieties is at present a rather risky business. A short time ago we purchased a Cattleya Trianæ variety with a high-sounding name, but on flowering it proved to be one of the worst I ever saw, and the case is not by any means an isolated one.

H. A. BURBERRY.

[The flowers sent are Dendrobium nobile albiflorum, which was figured at page 113 of our last volume (fig. 12). The variety question is undoubtedly a difficult one, and we could point out numerous instances of duplication of names, which, of course, ought not to be. Many varieties are about which have not been properly recorded, and even recorded ones are often so scattered as to be frequently overlooked. The varieties of some of our popular species want bringing together, and arranging in such a way that their differences can be compared, and we hope to be able to do something in this direction in future numbers. Few, however, but those who have attempted it know the difficulties attending such a work. It would be rather interesting if those who possess named varieties of D. nobile would send a flower for comparison.—ED.]

LÆLIA × VENUSTA.

I HAVE read with much interest the article on Mexican Hybrid Lælias at pages 45 to 48, but think there must be some mistake about L. × venusta being the product of L. grandiflora and L. furfuracea. More than twenty years ago the late Mr. James Backhouse imported, through his collector Butler, magnificent masses of Lælia autumnalis, but the first one called "venusta" was a plant with spikes one and a half to two feet long, with eight to ten flowers on a spike, each spike being as large and as perfect as L. autumnalis. This specimen was sold to Lord Londesborough when his collection was being formed at Grimston Park, Tadcaster. A few other plants were cultivated, Mr. Lee, of Downside, Leatherhead, and others obtaining plants at about the same time, when it came under the notice of Prof. Reichenbach, who, I believe, gave it the name venusta. Mr. Backhouse, a most careful observer, believed the plant to be a natural hybrid between L. furfuracea and L. autumnalis, and this is my opinon, as the result of seeing and cultivating it for nearly twenty years. I have never seen grandiflora (majalis) or furfuracea with stems more than about six inches long, nor having more than two flowers on a spike, while venusta had spikes equal in size to those of L. autumnalis, but the flowers had more

the form and texture of L. furfuracea. Whatever may be the facts, I thought there would be no harm in giving you the impressions formed here while cultivating the plants.

S. MARSHALL.

The Nurseries, York.

Mr. Marshall's note raises a rather interesting point with regard to Lælia × venusta, or L. autumnalis venusta, as the plant was formerly called. So far as I have discovered, the latter name was originally published in *The Garden* in 1884, (xxv., p. 366, t. 438). The plate shows two spikes, one bearing two flowers, the other only one. It was taken from Mr. Lee's plant, which is said to have been acquired at a sale of Messrs. Backhouse's at Steven's Rooms in the December previous. The late A. Wilson, Esq., of Westbrook, Sheffield, also acquired a plant from Messrs. Backhouse, and his gardener, Mr. E. Pidsley, when sending flowers to Kew, stated that he had flowered it three times previously, and that it bore two flowers on the spike at each time of flowering. These flowers are certainly identical with those from Mr. Lee, as Mr. Pidsley stated. Lord Londesborough's plant with eight to ten flowers on a spike I have not seen, and cannot avoid a suspicion that it may be something else. Is the plant still in existence? If so it would be very interesting to have a flower for comparison, as it is desirable that a question of this kind should be cleared up. With respect to the plant figured, I think the larger, fewer flowers, with a certain resemblance to L. grandiflora (which may also be traced in L. × Eyermaniana) supports the view I have taken of its origin. Will Mr. Marshall (or someone else) kindly send a flower which represents the original form at the first opportunity, so that the interesting question raised may be settled?

R. A. ROLFE.

EULOPHIELLA ELISABETHÆ.

Mr. James Hamilton, gardener to Hamar Bass, Esq., Byrkley, Burton-on-Trent, writes:—When Eulophiella Elisabethæ was sold by Mr. Sander I bought three plants to try. They are all now in flower, one bulb has two spikes, and I see there are about twenty flowers on a spike. I shall buy a lot of it, as I think it is rather good. I have grown it in Melon houses, close to the glass, without any shade.

[The plants in question were exhibited at the Drill Hall on March 12th, also some from other collections. It is evident that it succeeds well in a Warm house, and, as it has the appearance of being very floriferous, it seems likely to be more widely grown by those who have suitable accommodation. The flowers are of good substance, and of a pleasing white shade, while the flush of pink, together with the yellow crest, set them off to advantage. A year ago it was awarded a First Class Certificate.—ED.]

NOVELTIES.

PLEUROTHALLIS PARVA, Rolfe.—A small species, which flowered in January last in a clump of Cattleya Harrisoniana, in the establishment of Messrs. F. Sander & Co., St. Albans. It is allied to P. Klotzschiana, of the section Brachystachyæ, and has deep yellow flowers.—*Kew Bulletin*, 1895, p. 33.

DENDROBIUM ROBUSTUM, Rolfe.—This also flowered in Messrs. Sander's establishment last January. It is a New Guinea species, of robust habit, and allied to D. Mirbelianum. The flowers are yellowish green, with several light purple lines on the base of the sepals, a broader purple band on the lower half of the petals, and some purple veining on the lip.—*Kew Bulletin*, 1895, p. 33.

DENDROBIUM VELUTINUM, Rolfe.—A very distinct species, which was introduced from the Shan States by Messrs. Charlesworth & Co., of Heaton, Bradford, with whom it flowered early in 1894. It is allied to D. trigonopus, Rchb. f., a rare species probably not in cultivation. The flowers are deep buff yellow, the sepals keeled, and the nearly pandurate lip very velvety, in allusion to which the name is given. It is a very distinct species.—*Kew Bulletin*, 1895, p. 33.

CIRRHOPETALUM GRACILLIMUM, Rolfe.—A distinct and pretty little species, which flowered some years ago in the collection of T. R. Jarvis, Esq., Laurel Grove, Chelmsford, and afterwards in one or two other collections. The flowers are reddish purple, much like those of C. Cumingii. The dorsal sepal is ciliate, and the lateral ones prolonged into long narrow tails, somewhat as in C. vaginatum, which is quite different in other respects. It is believed to be a native of Burma.—*Kew Bulletin*, 1895, p. 34.

CIRRHOPETALUM MYSORENSE, Rolfe.—Introduced from the Mysore Hills, South India, by Mr. J. O'Brien, with whom it flowered in September, 1891, and afterwards in the collection of Sir Trevor Lawrence. The flowers are nearly white, with a purple lip, the shape approaching C. maculosum, Lindl., also the general habit of the plant.—*Kew Bulletin*, 1895, p. 34.

CIRRHOPETALUM NODOSUM, Rolfe.—A native of the Nilghiri Hills, South India, which flowered with Mr. J. O'Brien in August, 1892. It is allied to C. Macræi, Lindl., having the umbels slightly racemose. The flowers are densely speckled with reddish brown on a somewhat lighter ground, and somewhat resemble those of C. cornutum, Lindl., in structure.—*Kew Bulletin*, 1895, p. 35.

CIRRHOPETALUM SETIFERUM, Rolfe.—A Himalayan species, which flowered with Mr. J. O'Brien in August, 1891. It was received in a case of plants with various others, which indicate the habitat as being in or near Sikkim. It is allied to C. cornutum and C. picturatum, and recalls an enlarged edition of the former, except in the long teeth of the column and the terminal bristle of the dorsal sepal.—*Kew Bulletin*, 1895, p. 35.

CŒLOGYNE LAMELLATA, Rolfe.—A native of New Hebrides, received through Messrs. F. Sander & Co., St. Albans, from an unknown correspondent, who flowered it in August last. The flowers are pale greenish white, with a white lip, which bears numerous rows of corrugated keels. It is the second species known from New Hebrides.—*Kew Bulletin*, 1895, p. 36.

MAXILLARIA MOOREANA, Rolfe.—A pretty little species belonging to the M. grandiflora group, but with considerably smaller flowers. It was introduced from Guatemala by Messrs. F. Sander & Co., who flowered it in April, 1891. The flowers are cream-coloured, with seven maroon-purple stripes on each petal, and a densely farinaceous lip narrowly margined with the same colour. It has also flowered at Glasnevin with Mr. F. W. Moore, after whom it is named.—*Kew Bulletin*, 1895, p. 36.

ANGRÆCUM SMITHII, Rolfe.—A small leafless species, which flowered at Kew early in 1894, and again during the present year. It was sent by Consul C. S. Smith, of the Kilimanjaro Delimitation Commission, growing upon the branch of a tree with Angræcum bilobum var. Kirkei. It bears numerous racemes of small white flowers.—*Kew Bulletin*, 1895, p. 37.

FROST AND ORCHID FLOWERS.

Mr. Lusk, of The Dell, Woking, writes to us that he has now in perfect flower Odontoglossum Rossii majus with eight blooms, and Oncidium cucullatum with two blooms, which were exposed to three degrees of frost on the morning of February 8th. The greenhouse was fifty-two degrees on the night previous. To buds of Odontoglossum crispum, on the other hand, the frost was fatal.

[The note is interesting, but we are not at all surprised to find that these two species are so hardy. Both are strictly high Alpine plants, and we have little doubt that where they grow the temperature sometimes falls below the freezing point. It would be interesting to hear of any other species which have borne frost without injury.—ED.]

PHALÆNOPSIS PARISHII VAR. LOBBII.

The charming little Phalænopsis Parishii, a native of Burma, has long been known in cultivation, and now evidence comes from two different sources that its very distinct Himalayan variety, Lobbii, has again appeared. It was discovered exactly half a century ago by Thomas Lobb, when collecting for Messrs. James Veitch and Sons, of Chelsea, though it was not described until many years later, after the introduction of the Burmese form. It appears to have been in cultivation in 1871, when Reichenbach described it from the collection of J. Day, Esq., of Tottenham (*Gard. Chron.*, 1871, p. 802). The two agree in habit and structure, but are remarkably distinct in colour. The typical form, which was noted at p. 165 of the last

volume, has the lip bright purple, and the base of the column spotted all over with brown on a yellow ground; but in the variety Lobbii there are two broad chestnut brown bands, one on either side of the lip, separated by a narrow white line, and a similar line on either margin. The base of the lip also has only a pair of eye-like spots on the yellow ground. The two forms afford a very effective contrast. R. A. R.

ORCHIDS AT BURFORD.

SEVERAL remarkable Orchids are now flowering in the rich collection of Sir Trevor Lawrence, Bart., Burford, Dorking, of which a few notes will probably prove interesting to our readers. Platyclinis glumacea is a remarkable plant, about three feet across, with 106 spikes fully open. It is certainly a beautiful species, and a large specimen when well flowered is a sight not easily forgotten. A very great point in its favour is its easy cultivation. When growth commences it requires the temperature of the East Indian house. The flower spikes are produced with the new leaves, during which time the plant requires almost unlimited supplies of water at the root. Immediately the flowers fade is the best time for repotting the plant, which does not require much space to grow in, just keeping the outside bulbs within the rim of the pot. The pots should be quite three parts full of crocks, with a thin layer of sphagnum, to secure efficient drainage. A suitable compost is equal parts of good fibrous peat and clean picked moss, with a moderate quantity of broken crocks mixed with it. After repotting, place the plant in a moist, shady part of the Warm house, and give just sufficient water to keep the compost moist until the new growths are completed. Then the plant should be removed to a Cattleya, or Intermediate house, and the supply of moisture gradually decreased. There it may remain with safety until new growths appear, which they generally do about the end of the year.

Another plant worthy of mention is Angræcum pellucidum, which has fourteen spikes, each quite two feet in length, and very beautiful, the semi-transparent flowers being exceedingly interesting and attractive. There are fifteen dark green leaves on the plant, measuring considerably over a foot in length and nearly three inches in width. It is a very pretty object, and much appreciated by those who have seen it in full beauty. The species requires very careful attention, especially as regards sunlight, and the direct rays of the sun should on no account be allowed to touch it at any time, as the foliage quickly assumes an unhealthy yellowish hue from this cause. When the flowers are over, the plant may be repotted if necessary, or re-surfaced with fresh material. The pots should be nearly full of drainage, and the plant well elevated above the rim of the pot. Surface the compost with freshly-picked sphagnum moss, and water with a fine-rose watering pot, giving sufficient to keep

the sphagnum in a growing condition. The East Indian house is the proper place for it the whole year round.

Another interesting plant is the hybrid Epidendrum × O'Brienianum. Last May it was exhibited at the Temple Show with several spikes of bloom, one of which has continued to produce flowers ever since; in fact, since that period there has never been less than a dozen flowers open at one time. Altogether there has been 112 flowers on the one spike, and now there are about twenty more to open. A plant of Cypripedium Chamberlainianum has also been in bloom since last May, and there are several more flowers now to open. Messrs. Veitch's charming hybrid, Epiphronitis × Veitchii, is a plant well worth adding to any collection. The plant measures a little over a foot high, and the spike has a dozen flowers and buds altogether. It is certainly a beautiful plant, of easy cultivation, requiring to be grown in an intermediate temperature the whole year round. An old Orchid not often met with is Maxillaria lepidota, but when seen, as here, with about 200 blooms on one specimen, no one could fail to appreciate its beautiful effect. It succeeds admirably in an Odontoglossum house temperature. The new Eulophiella Elisabethæ will be in bloom ere this is in print, four plants having altogether nine spikes. One of the principal attractions at this time is a fine specimen of the brilliant Sophronitis grandiflora. A few years ago the plant had only about a dozen blooms on it. In 1893, when it was exhibited at the R.H.S., it had forty blooms, and was awarded a Silver Medal by the Orchid Committee. In 1894 it produced sixty blooms, and at the present time it has sixty-two. One other special plant in bloom must not be omitted, that is Dendrobium lituiflorum candidum. It is a distinct and beautiful variety, the flowers rather larger than in the type, the sepals and petals pure white, and the lip very pale sulphur-yellow. It is very doubtful if this variety is represented in any other collection.

PLEUROTHALLIS BICARINATA.

The species of Pleurothallis are, with few exceptions, only plants of botanical interest, yet they are continually turning up in various collections, and in the aggregate a considerable number must be in cultivation. The present one, which was originally introduced from Brazil, and flowered with Messrs. Loddiges in 1838, has again turned up in the South Brazilian importations of Messrs. F. Sander & Co. It was described by Lindley as P. bicarinata (*Bot. Reg.*, xxv. Misc., p. 14), evidently in allusion to the two keels which run down from the base of the leaf to the first node, below which the stem is terete. It belongs to the group Sicariæ, and bears a raceme of about seven dull yellow flowers with some dusky brown on the inside of the lateral sepals and lip. The plant is about a foot high.

R. A. R.

ODONTOGLOSSUM ROSSII IMMACULATUM.

We have now much pleasure in presenting our readers with a figure of the charming little albino of Odontoglossum Rossii, which was described at page 132 of our last volume, which appeared in the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, some time ago. As will be seen by the figure, every trace of spotting has vanished from the flower, leaving the petals and lip white, and the sepals pale pink, and thus contrasting very

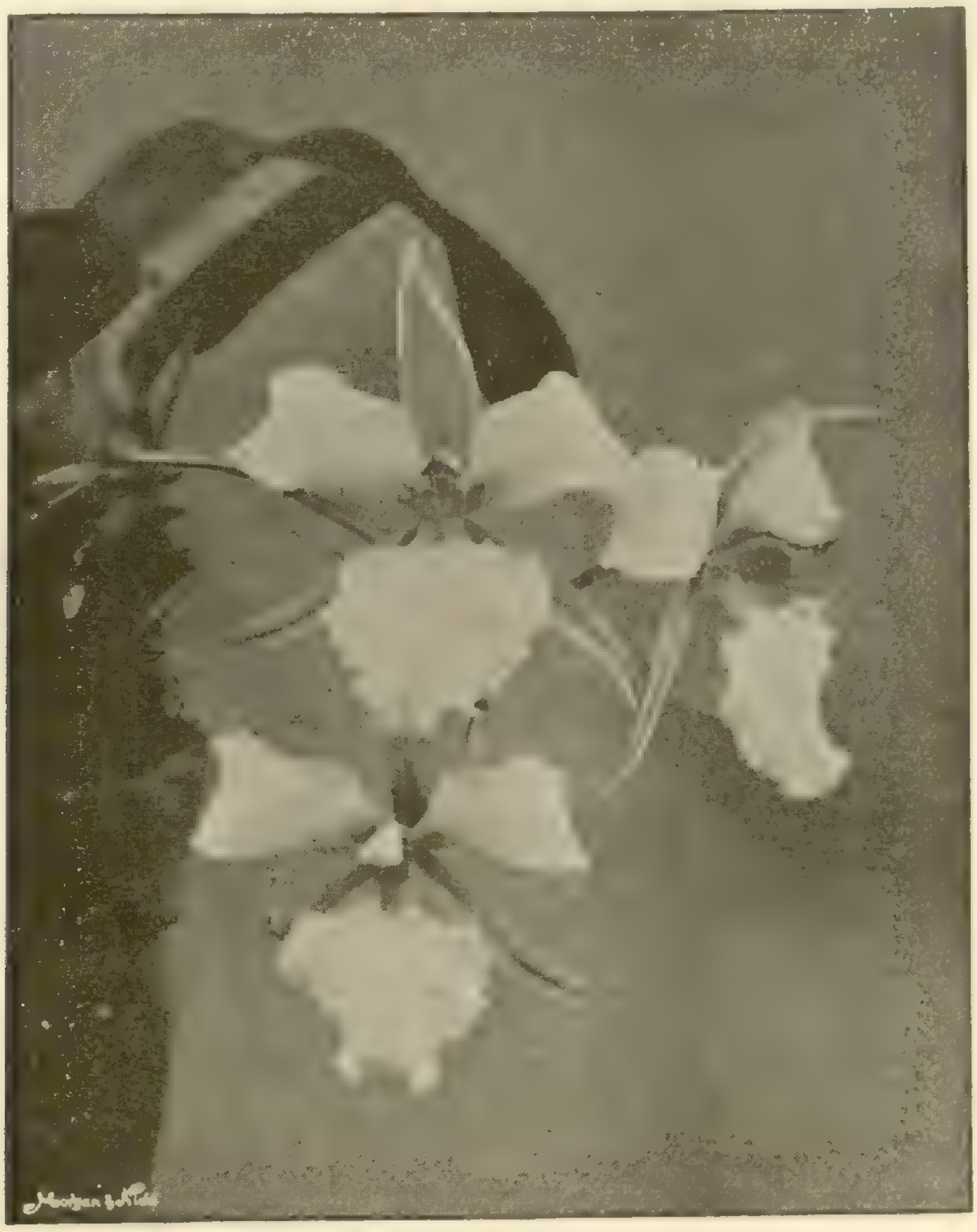

Fig. 5. ODONTOGLOSSUM ROSSII IMMACULATUM.

effectively with the typical form. Mr. Wrigley now possesses two small plants, and they are the only ones we know of among the thousands in cultivation of this popular little species. The photograph here reproduced was sent last year by Mr. Wrigley, and was taken by that gentleman's daughter, who is an accomplished amateur photographer. As will be observed the plant is not very strong, but whether that is a constitutional peculiarity or not we do not know. Continued cultivation side by side with the ordinary form will throw light on this point. It also flowered in the previous year and showed precisely the same character, so that the peculiarity is evidently permanent. The species is well known as one of the best of the Mexican Odontoglots, and succeeds well cultivated in hanging pans in the Cool house. It has several varieties, and there is also a natural hybrid between it and O. maculatum, known as O. × Humeanum. The present variety is a very interesting addition to the group.

CATTLEYA TRIANÆ AND ITS VARIETIES.

At page 49 of our first volume we gave an account of the history, and some of the principal varieties of this popular winter-flowering Cattleya, with a list of figures, and since then we have received a large number of flowers with requests for names. Owing to the almost universal interest felt in this matter, we have tried to bring together a complete list, which we now offer to our readers in the hope that it may enable them to identify their plants with, at all events, some degree of accuracy. The advantage of having such a list will be obvious to everyone, though it must be understood as to a certain extent provisional only, and it would probably have taken a somewhat different form, could we have compared a flower of each variety named. In all probability some have been lost sight of, and others may have been renamed—indeed it appears certain that this has taken place in several instances, though to what extent can only be guessed at, owing to the imperfect way in which many varieties have been described. One or two examples will serve to illustrate this point. In 1868 three varieties, Cleopatra, Juno, and tricolor, each received a First-class Certificate from the Royal Horticultural Society, the fact being recorded in the *Gardeners' Chronicle* without any note of their characters. As the Society's *Journal* failed to throw light on the subject, we turned to the *Florist and Pomologist*, and found them recorded as varieties of C. Warscewiczii, and the error has been repeated in the "List of Garden Orchids." Two years later the variety Lawrenceana received a similar award, and one report described the colour of the sepals and petals only, while another confined its remarks to the lip, the two, fortunately, supplementing each other.

With regard to the arrangement followed, one or two explanatory remarks are necessary. In the first place an attempt has been made to give a classified list, beginning with the more typical forms, and gradually passing to the more extreme ones. This is by far the most useful arrangement, as it enables one immediately to ascertain the affinity of any given form, though to be perfect it would require to be drawn up from a comparison of each variety. This being impossible, we have made no attempt to reduce the list, though so far as the descriptions go, some of the varieties appear to be almost or quite identical. We may be able to revise the list on a future occasion, and should be much obliged if those who possess named varieties would forward a flower for comparison, as only by this means can the subject be rescued from the confusion into which it has undoubtedly fallen. And we also express the hope that before additional varieties are named, this list will be consulted, in order that unnecessary additions may be avoided. It would be a safe rule to follow not to name any variety unless it shows some marked deviation which can be defined in intelligible language, slight variations in size and colour must always occur, and it might almost be said that no two forms are exactly alike in every

respect, but it is too much to expect that every one should receive a distinctive name. For the typical form, especially, a certain amount of latitude must be allowed, and one or two of the named varieties are what we should consider typical.

For economy of space a few abbreviations have been made. *G.C.* = *Gardeners' Chronicle*; *L.* = *Lindenia*; *O. A.* = *Orchid Album*; and *R.* = *Reichenbachia*. F.C.C. and A.M., followed by dates, indicate awards made by the Royal Horticultural Society.

The typical form has the sepals and petals pale rosy mauve or rosy lilac, the side lobes of the lip similar or a little deeper in colour, the front lobe bright purple-crimson, and the disc deep or orange-yellow.—Figs. *O. A.*, i. t. 45; *The Garden*, xxii. p. 70, t. 346. (See also *supra*, i. p. 50).

Very nearly typical in size and colour.

1. VAR. ATALANTA, *G. C.*, 1870, p. 111. Flower pale rose, with deep rich purple lip. F.C.C., R.H.S., Jan. 19, 1870; W. Marshall, Esq., Enfield.

2. VAR. VENUS, *G. C.*, 1870, p. 111. Like preceding, but larger. F.C.C., R.H.S., Jan. 19, 1870; W. Marshall, Esq.

3. VAR. FORMOSA, *O. A.*, iii. t. 108. Sepals and petals blush pink, lip rosy magenta, orange disc slightly veined with a deeper tint. B. S. Williams.

4. VAR. RUSSELLIANA, *O. A.*, v. t. 219. Near preceding, sepals and petals a little paler, orange disc rather smaller. B. S. Williams.

5. VAR. VICTORIA-REGINÆ, *G. C.*, 1885, i. p. 309. Very similar to the preceding, according to description. W. Lee, Esq., Leatherhead.

6. VAR. HOOLEANA, *O. A.*, vi. t. 265. Flower a little smaller and deeper coloured than the type. A. Potts, Esq., Hoole Hall, Chester.

7. VAR. NORMANII, *G. C.* 1885, i. p. 309. Like var. Backhouseana, without the feathered blotch on the rosy lilac petals. W. Lee, Esq.

8. VAR. FULGENS, *G. C.*, 1890, i. p. 219. Lip glowing crimson, colour of sepals and petals not described; may belong here or to another group. A.M., R.H.S., March 11, 1890; H. B. Mildmay, Esq.

Flowers larger, but nearly typical in colour.

9. VAR. OSMANII, *Fl. Mag.*, n.s., 1879, t. 361; *Warm. Sel. O.*, iii. t. 29.—Petals two-and-a-half inches broad, rosy mauve, front lobe of lip bright purple-crimson, with the transverse yellow marking narrower than usual. R. B. Dodgson, Esq., Blackburn. Named after Mr. Dodgson's gardener, Mr. Osman, and fetched 215 guineas at the dispersal of the collection.

10. VAR. TAUTZII, *G. C.*, 1889, i. p. 300.—F. G. Tautz, Esq., and

11. VAR. HIGHBURIENSIS, *G. C.*, 1891, i. p. 401.—Rt. Hon. J. Chamberlain, M.P., are apparently very similar to var. Osmanii.

12. VAR. LAWRENCEANA, *Fl. and Pom.*, 1870, p. 93; *G. C.*, 1870, p. 249.—Flowers very large, deep blush, lip intense rosy purple.—F. C. C.,

R. H. S., Feb. 16, 1870; Bishop Sumner (gr. Mr. Lawrence, after whom it was named).

13. VAR. LEEANA, *G. C.*, 1885, i. p. 309.—Described as the largest of all, the petals being three inches broad, and rosy lilac, the front lobe of the lip deep magenta mauve, and the disc striped with orange.—F. C. C., R. H. S., March 25, 1884; W. Lee, Esq.

14. VAR. MAGNIFICA, *G. C.*, 1885, i., p. 309.—Nearly as large as the preceding, petals pale lilac, lip crimson with sulphur-yellow disc.—W. Lee, Esq.

15. VAR. GRAVESIÆ, *G. C.*, 1893, i. p. 357.—Sepals and petals pale pink, the latter very broad, front lobe of lip bright red, disc yellow.—H. Graves, Esq., Orange, New Jersey.

16. VAR. SCHRŒDERIANA, *G. C*, 1886, i. p. 266; *R.*, ser. i., i., p. 105, t. 46.—Sepals and petals blush, front lobe of lip crimson purple, throat orange.—F. C. C., R. H. S., Feb. 9, 1886; Baron Schröder.

17. VAR. MEASURESIANA, *G. C.*, 1890, i. p. 299.—Sepals and petals rosy white, lip intense lake crimson, disc yellow.—R. H. Measures, Esq., Streatham.

18. VAR. PURPURATA, *L.*, v., p. 77, t. 229.—Sepals and petals lilac-rose, lip rose purple, disc orange.—L'Horticulture Internationale.

Flowers rose-coloured.

19. VAR. ROSEA, *G. C.*, 1883, i., p. 310, flowers nearly uniformly warm rose, with pale orange throat.—W. Vanner, Esq., Chislehurst.

20. VAR. ANNÆ, *L.*, i. p. 67, t. 31.—Flowers light rose, front lobe of lip a little darker, throat yellow.—L'Horticulture Internationale.

Sepals and petals blush.

21. VAR. JUNO, *G. C.*, 1868, p. 240 (name only). C. Warscewiczii, var. Juno, *Fl. and Pom.*, 1868, p. 93.—Flowers large, blush, lip rich ruby-purple.—F.C.C., R.H.S., March 3, 1868; W. Marshall, Esq.

22. VAR. Io., *G. C.*, 1870, p. 111.—Flowers large, deep blush, with purplish rose lip, paler at the edges.—F.C.C., R.H.S., Jan. 19, 1870; W. Marshall, Esq.

23. VAR. MADAME R. MARTIN-CAHUZAC, *L.*, v., p. 79, t. 230.—Front lobe of lip crimson-purple, with narrow white margin, throat orange.—L'Horticulture Internationale. C. quadricolor, Andre, *Ill. Hort.*, xiv., t. 514, and C. Kimballiana, L. Lind and Rod. *L.*, ii., p. 85, t. 89, approach this variety in some respects.

24. VAR. EMILIÆ, *G. C.*, 1884, i. p. 342.—Front lobe of lip purple-crimson with light rose margin.—W. Lee, Esq.

25. VAR. COLEMANII, *Fl. Mag.*, n.s., 1875, t. 176.—Flower large, front lobe of lip light rose-purple, throat yellow, somewhat veined, as in the following variety.—J. Coleman, Esq., Stoke Park, Slough.

26. VAR. CHOCOENSIS, *Veitch Man. O.*, II., p. 25. C. chocoensis, Andre, *Ill. Hort.*, XX., p. 43, t. 120.—Flowers small, fragrant, front lobe of lip light rose, disc veined with similar colour on a light ground.—M. J. Linden.

27. VAR. QUADRICOLOR. C. quadricolor, Batem. *G. C.*, 1864, p. 269; *Bot. Mag.*, t. 5505. Lip darker than the preceding on the sides.—S. Rucker, Esq., Wandsworth.

28. VAR. PENELOPE, *G. C.*, 1870, p. 111.—A large warm lilac flower, with a broad lemon-coloured bar on the lip.—F.C.C., R.H.S., Jan. 19, 1870; W. Marshall, Esq. C. T. Popayan, *G. C.*, 1884, i., p. 377, is very similar, and C. labiata magnifica, *Gartenflora*, xxxvii., p. 497, t. 1281, may be an undeveloped state of the same, the segments being unusually narrow.

29. VAR. DELICATA, *G. C.*, 1885, i. p. 309. C. Warscewiczii delicata, T. Moore, *Warn. Sel. O.* I. t. 4. C. Rollissonii, T. Moore, *Fl. Mag.*, I., t. 8.—Flowers wholly pale blush, except some yellow on the disc.—Messrs. Rollisson, Tooting.

30. VAR. FAIRY, *G. C.*, 1893, i. p. 293.—Flowers white, suffused pale rose, with a faint tinge of yellow in the throat.—J. T. Holmes, Esq., Bath.

31. VAR. PALLIDA, *L.*, v. p. 81, t. 231. Disc of lip deep yellow, rest of flower blush white.—L'Horticulture Internationale.

32. VAR. MARGINATA, *G. C.*, 1890, i. p. 219.—Lip broadly margined with white, disc orange, otherwise much like the preceding.—A.M., March 11, 1890; J. Laing & Sons.

Sepals and petals white, lip coloured.

33. VAR. CLEOPATRA, *G. C.*, 1868, p. 240 (name only). C. Warscewiczii, var. Cleopatra, *Fl. and Pom.*, 1868, p. 93.—Flowers large, front of lip richly coloured.—F.C.C., R.H.S., March 3, 1868; W. Marshall, Esq.

34. VAR. TRICOLOR, *G. C.*, 1868, p. 240 (name only). C. Warscewiczii, Var. tricolor, *Fl. and Pom.*, 1868, p. 93.—Smaller than preceding, disc of lip yellow, front lobe rich purple.—F.C.C., R.H.S., Mar. 3. 1868; W. Marshall, Esq.

35. VAR. DODGSONI, *G. C.*, 1879, i. p. 406; *Fl. Mag.*, n. s. 1873, t. 64; *O. A.*, vi, t. 249.—Flowers very large, front lobe of lip deep purple-crimson, disc orange-yellow.—R. B. Dodgson, Esq. Sold for 185 guineas at the dispersal of the collection.

36. VAR. SPLENDIDISSIMA, *O. A.*, iv. t. 150.—Near the preceding, but the rich magenta-crimson of the lip carried further round the side lobes and into the throat, disc orange.—F.C.C., R.H.S., March 12, 1884: B. S. Williams.

37. VAR. HILLII, *Will. O. Gr. Man.*, ed. 6, p. 203.—Very near one of the preceding forms, as the description points out no differential character.—C. G. Hill, Esq., Arnot Hill, Nottingham.

38. VAR. REGINÆ, *O. A.*, x., t. 466.—Lip broadly margined with white, throat yellow, with a rich magenta-purple blotch in front.—B. S. Williams.

Albino forms, the yellow disc being the only colour.

We do not know how the three following differ :—

39. VAR. ALBA, *G. C.*, 1882, i., p. 222; *L.*, i., p. 63, t. 29.—Messrs. J. Veitch & Sons.

40. VAR. CORNINGII, *G. C.*, 1887, i., p. 428.—Presumably Hon. E. Corning, Albany, New York.

41. VAR. VIRGINALIS, *G. C.*, 1893, i., p. 356.—M. A. A. Peeters, Brussels.

Petals with crimson more or less, feathered blotch at apex.

42. VAR. BACKHOUSEANA, *G. C.*, 1885, i., p. 309.—Petals blush pink, with crimson feathered blotch near apex, lip richly coloured.—James Backhouse & Sons.

43. VAR. CAPARTIANA, *L.*, ix., p. 87, t. 426.—Near preceding, petals light rose, with deeper feathered blotch, lip rose purple.—Dr. Capart, Brussels.

44. VAR. ERNESTII, *R.*, ser. I., p. 99, t. 43.—Petals with large irregular rose-purple blotch at apex, lip rose-purple with deeper blotch in front of the yellow disc.—F.C.C., R.H.S., Feb. 9, 1886; R. I. Measures, Camberwell.

Petals with darker median line.

45. VAR. HARDYANA, *G. C.*, 1879, i., p. 366.—Petals white, washed with lightest whitish purple, especially on the middle part, lip richly-coloured.—F.C.C., R.H.S., March 10, 1891; G. Hardy, Esq., Timperley.

46. VAR. PLUMOSA, *G. C.*, 1891, i., p. 214.—Petals broad, soft rose, with deeper central line, lip richly coloured.—A.M., R.H.S., Feb. 10, 1891; T. Statter, Esq., Manchester.

47. VAR. (unnamed), *G. C.*, 1891, i., p. 406.—Petals rosy lilac, with a crimson-purple line in upper half; lip richly coloured.—A.M., R.H.S., March 26, 1889; Mr. Bruce Findlay, Manchester.

48. VAR. STRIATA, *L.*, v., p. 83, t. 233.—Petals blush, flamed down the centre with a broad irregular rose-purple band.—L'Horticulture Internationale.

Petals veined.

49. VAR. MASSANGEANA, *G. C.*, 1883, i, p. 242; *O. A.*, vi, t. 242.—Petals irregularly veined with lilac-purple on a light ground; lip similarly veined, throat yellow. M. D. Massange, Marche, Belgium. F.C.C., R.H.S., Feb. 16th, 1885; Sir T. Lawrence.

50. VAR. EMPEROR, *G. C.*, 1885, i, p. 309.—Petals veined, rosy-lilac; lip richly coloured.—W. Lee, Esq.

51. VAR. WILLIAMSII, *Will. O. Gr. Man.*, ed. 6, p. 205.—Petals distinctly veined with rosy magenta, especially along the centre; lip intense crimson-purple with very small yellow disc.—B. S. Williams.

52. VAR. LACERA, *G. C.*, 1869, p. 738.—Flower white, suffused with purple, petals with thick teeth, lip narrow.—J. Day, Esq., Tottenham. Probably undeveloped.

Inner halves of lateral sepals bearing a broad orange-coloured stripe.

53. VAR. VANNERIANA, *G. C.*, 1886, i., p. 331.—Flowers light rose; lip deeper.—W. Vanner, Esq. The lateral sepals appear to be becoming lip-like in character.

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DENDROBIUM SPECIOSISSIMUM.

The existence of a very fine Dendrobium, allied to D. formosum, on Mount Kina Balu, in Borneo, has long been known, though very little is on record respecting it, and we therefore learn with the greater satisfaction that plants of it are on the way home, and that it may soon be included in our collections. It was discovered by Hugh Low, Esq. (now Sir Hugh Low), Colonial Secretary at Labaun, on his ascent of the mountain in 1851, at about 6,000 feet elevation. His dried specimen consists of a four-flowered raceme with the basal bracts. Burbidge found it growing on the Marie Parie spur of the same mountain, at about 4,000 feet elevation, and speaks of the climate as similar to that of a warm autumn evening in a Devonshire wood, and the air chilly at night. He thus describes it:—"A beautiful white-flowered Dendrobium grows among the bushes. It belongs to the nigro-hirsute section, and has pseudobulbs five or six feet high. The blossoms are described by Mr. Low as being similar to those of D. formosum giganteum, but with a deep orange-red blotch on the lip."—(*Gardens of the Sun*, p. 108.) Whether Mr. Low's note referred to was a personal communication or not we cannot say, but if previously published we have failed to trace its origin. For many years nothing further seems to have come to light respecting it, until a short time ago, when Messrs. Hugh Low

and Co., of Clapton, received dried materials from their collector of the same species, which has been named D. speciosissimum (Rolfe), and soon afterwards they announced that a consignment was on the way home. The date 1867, however, mentioned in the announcement, requires to be carried back for a period of sixteen years, for it was in 1851 that the original discovery was made, and in the following year several of the plants collected at the same time were figured in Hooker's *Icones Plantarum*. Messrs. Low's announcement was followed a week later by another from Messrs. F. Sander and Co., St. Albans, stating that Ericsson, one of their collectors, had also met with the species, and was sending plants home. We have seen dried flowers from each source, proving their identity, and now we may soon expect to see it in cultivation. Whether it will prove a good traveller or not remains to be seen, but it is certainly a magnificent species, as the dried flowers, which are of course flattened out, measure over four and a half inches across their broadest diameter. Though closely allied to D. formosum, the lip is cut in deeper at the sides, the petals broadly elliptical instead of rounded, and the spur shorter and less acute. In all probability it will succeed under similar treatment. It is very curious that so fine a species should have remained so long practically unknown.

CALENDAR OF OPERATIONS FOR APRIL.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

ALLOW a rise of two or three degrees from the figures mentioned last month in all departments. Ventilate freely when the circumstances are favourable, especially in the cool houses, both night and day. Beware of piercing east winds when the roller blinds are let down, for a check is often caused at this period if air is admitted in too large quantities, and the atmosphere becomes dry. During cold windy weather, when the sun shines brightly, it is best to use the shading freely, rather than to open the ventilators widely.

A regular supply of moisture must now be kept up by thoroughly damping the paths, stages, and other surfaces at least three times daily. Let a supply of hard tree leaves saved from last year be brought in and placed under the stages, which greatly assists in maintaining an even and moist atmosphere. In the cool Orchid house very little heat from the hot-water pipes will now be wanted, unless the nights be cold, as is sometimes the case, when a little should be given in order that ventilation can be maintained, for cool Orchids do not like a stagnant atmosphere. It is bad practice at this date to keep the ventilators quite closed if it can possibly be avoided. The delicate flowers frequently become badly spotted if such is the case.

The lovely weather during the past few weeks has had a most stimulating

effect upon all Orchids. The foliage, which had become limp and flaccid, is fast regaining its stiffness. New roots are pushing forth together with new growths, and this is a most welcome sign. So fast will be the growth at this season, that it will be sharp work where large quantities of Orchids are grown to keep pace with the times, so far as repotting is concerned. Nearly everything will seem to claim attention at once, making the present a very busy and anxious time, as Orchids cannot be repotted and cleaned so quickly as most other plants. The work, however, must not be at all scamped. Whatever plants are repotted, let them be done carefully and well, while those which can reasonably be expected to go through the season successfully without it should be left undisturbed, receiving only a little new material placed lightly on the surface.

Insect pests are now multiplying on every hand, and much of the future success depends upon keeping them in check at this season. Bear in mind that prevention is better than cure. I have previously stated methods whereby these may be destroyed, with the exception of ants, which up to within a few months ago defied every attempt to successfully dislodge them. I can now recommend a preparation known as the "Ballakilraim Ant Poison," procurable at Messrs. Alex. Cross & Sons, Glasgow, which is a simple, cheap, and most efficacious destroyer of these very troublesome little pests.

We have now most of our Dendrobiums in their growing quarters. Careful watering must be practised at present, until the new growths are nicely up and rooting. There is not so much fear of Dendrobiums of the Wardianum or nobile sections damping off when young, as there is with such species as D. macrophyllum and D. Bensoniæ. With these two latter, especially if they have been repotted, it is necessary to be very cautious in giving water, and giving them the hottest part of the house. The last-named species is very susceptible to injury from cold; it should therefore never be removed from the warm house, not even for a short time when in flower. It succeeds best if grown in very small pans or baskets, and is now showing its flower-buds. D. Dalhousieanum, D. Parishii, D. × Nestor and D. primulinum are others in flower at this date, and should at once be started to grow in the hottest department.

Dendrobium Loddigesii is extremely pretty when well-flowered, and to attain this end it is best to give it a long dry rest in intermediate temperature, just giving water enough to prevent excessive shrivelling, until the outline of the flower-buds can be discerned, otherwise what should be flowers turns to growth. This species, like D. Falconeri, makes a number of new growths anywhere on the pseudobulbs, all of which should be allowed to grow. D. Falconeri is now showing flower-buds, and may receive more water. It is best grown suspended in a shady part of the Cattleya house. Dendrobium thyrsiflorum and D. densiflorum will likewise be showing for

flower, and must receive more water. These are generally very easy Orchids to grow, so long as the roots are in good condition. The most important points to bear in mind in the successful culture of Dendrobiums are to guard against over-potting, to pot lightly, to use the best of peat and sphagnum (if the former is not good use the latter alone), to water freely when growing, to give plenty of heat, and to keep a very moist atmosphere, and to suspend all near the glass that can conveniently be suspended.

Wherever repotting can be done it should be proceeded with briskly, for Orchids always grow better and recover quickly from the effects of root disturbance if they are repotted at the proper time. Those who understand the growth of Orchids in the least will easily recognise the proper season. It is when the new growths appear, and new roots are seen to push out. It is then that these new roots delight in sweet fresh compost, and readily take hold of it. Some of the earliest to flower of the Cattleyas and Lælias are now in this condition, and should be attended to if they require it. The best compost, I still maintain, is good fibrous peat and fresh sphagnum moss in equal parts, intermixed with a few broken crocks or charcoal. Break the peat up in pieces about the size of a hen's egg, and knock out the greater portion of the fine or dusty particles. Having the new compost at hand, together with a supply of clean crocks, the repotting may be proceeded with. Turn out the plant, and remove the old material clinging to the roots as carefully as possible, so as not to injure them. A clean pot of the right size should now be crocked, or drained—if a small one, about half-full; if a large one, about three-parts full. On these place a layer of sphagnum, then place the plant in position, holding it there with one hand, and evenly distribute the roots with the other, afterwards filling in between the roots with the new compost, taking care not to press it in too firmly. I prefer to pot very loosely, keeping the plant fixed in its proper position by the means of a few small sticks. The roots are thus enabled to enter and ramble more freely, and quickly become re-established; the water can also pass through freely and escape.

The potting of Cypripediums must also be seen to as they commence to grow. These Orchids are not so particular as to the fibrous nature of the peat; a little fibrous loam may also be added with good effect, although this latter is not an absolute necessity, the success of culture depending much more upon atmosphere, temperature, watering, and general attention, than upon any particular soil. Repot Cypripediums just like other Orchids. Sometimes one is afraid of injuring the roots, and therefore inserts the old ball of roots intact into a new pot, which is exceedingly bad practice, and never answers.

Now is the best time to purchase newly-imported Orchids, as they have the summer before them, and generally get nicely established before the autumn arrives. Orchids imported in the autumn usually take a long time

to recover, and frequently die; and even at the present season some little care is needed to first give them a start in growth. Gradually accustom them to heat, light, and moisture, for if this is done too rapidly, the foliage may drop off and the pseudobulbs decay. As soon as newly-imported plants are received, remove all decaying matter, and place them on the stage in an upright position in a somewhat cool, shady, and moist house. Gradually inure them to water by slightly moistening the roots to commence with, and as plumpness and colour are seen to be returning, it is safe to increase the supply. New growth and new roots will then soon appear, and the imported plants may then be potted, or placed in baskets or pans, and treated as established plants. When repotting, take the advantage to form well-shaped plants, as frequently imported plants are spreading and ill-formed. This can be done by separating the mass and re-forming it again more compactly. It is also a great mistake to leave a mass of old roots on them. I have seen some disastrous results from this. Lælia albida and L. anceps, for instance, arrive sometimes in enormous clumps, and to preserve them intact it is sometimes attempted to grow them exactly as received, but so treated they rarely do well. Experience has shown me that it is best to separate the clump piece by piece, cut away the old roots, and afterwards re-form the mass, so that the base of the pseudobulbs rests upon the compost, into which the roots quickly enter, and a vigourous healthy specimen is the result.

Odontoglossum coronarium is anything but an easy Orchid to flower. It seems to require what may be called "rough treatment" to gain this end; and anyone accustomed, as most good plantsmen are, to treat plants liberally and carefully, may well be excused for failing to bloom it. Ours is a large plant and is showing a spike, the first for many years. Whether this spike is due to the following treatment is a matter which I am not prepared to say, although it seems to us that such is the case, for though to all appearances strong enough to flower in previous years, it has immediately commenced to grow again from the last-made pseudobulb, and continued to grow throughout the winter months. Last autumn, however, we were advised to pinch out the new breaks as they pushed forth from the newly-formed pseudobulb. This was done, but the plant persisted in growing, and other dormant eyes pushed forth about the middle of December, which were also removed. Water was also withheld throughout the winter to such an extent that a very considerable shrivelling of the pseudobulbs occurred. After the second set of growths were taken out, the plant finally decided to flower, and about the end of January one out of a possible four spikes began to show itself, not from the base of the last, but from one of those of the previous year. This spike is showing twenty flower buds, and will probably expand its blossoms some time during this month. It seems scarcely possible that any plant should require such mutilation and drought

to induce flowering. In its wild state doubtless some check is given by nature, which causes growth to stay in abeyance, and spikes to proceed, and the treatment here described may possibly be the correct way to bring about the same result under artificial cultivation. It luxuriates in the Cool house.

If Anguloas require repotting let them be done at once, before the new growths and flower-buds, which appear together, get too far advanced. The compost recommended for Cypripediums suits them best. They are Cool house Orchids, but when newly potted it is best to encourage growth freely by placing them in the Intermediate house, where they should remain until they have flowered, afterwards removing them to the Cool house again. Cymbidiums like a shady position in the Intermediate house. They are now producing flower-spikes, and should receive a little more water at the roots, but avoid giving too much at present. Ada aurantiaca is in flower. This is usually spoken of as a Cool house species, where I am aware they do flourish for a time after importation, but in the long run more warmth is the best. The temperature that grows Masdevallias free from the black spot suits them admirably.

Now is a good time to repot Eulophias, Bletias, Phaius, and such-like Orchids. They mostly require a stove temperature, and a place near the glass. They are partial to a little fibrous loam and leaf soil mixed in with the peat and sphagnum. Cœlogynes should be repotted after blooming if they require it, and placed in their growing quarters. Do not disturb the roots too frequently, especially C. cristata, for this species resents re-potting. When this is done it is best not to divide the mass of pseudobulbs if it can be avoided. An exception to the general rule of potting may be taken with that lovely summer blooming Epidendrum vitellinum, which is now just starting into growth and pushing flower spikes. I prefer the present time for repotting, but here again avoid doing it unnecessarily, as they are greatly checked by it. I grow them in mostly peat, as this resists decay longer than sphagnum. The Cool house is best to grow them in.

When writing of the advantage of moisture to Orchids, perhaps I have previously omitted to mention one of the best means of storing and maintaining the same. It is the growing of a various collection of foliage plants everywhere under the stages, wherever they can be planted. When the house is damped, these are damped also, which greatly assists in keeping the air moist. And this is not all, for the house is also beautified by their presence, and rendered much more agreeable to the eye. When planted on the ground by the side of the path, or in the sea gravel on the stages, many beatiful foliage plants grow freely enough, such, for instance, as Pilea muscosa, most of the Ferns and small Palms, Selaginellas, Tradescantias, and a host of other stove and greenhouse foliage plants, which grow as wel under as upon the stages.

ORCHID PORTRAITS.

CATTLEYA GIGAS VAR AMPLISSIMA, Lind.—*Lindenia*, t. 461.

CATTLEYA × MANTINII.—*Rev. Hort.*, Mar. 16, p. 129, fig. 35.

CYPRIPEDIUM CURTISII.—*Gard. Mag.*, Mar. 9, p. 142, with fig.

CYPRIDEDIUM × DAUTHIERI DIMIDIATE.—*Gard. Chron.*, Mar. 16, p. 335, fig. 45. The curious sport known as C. × D. Poggio Gherardo, whose history is given at pages 20 and 147 of our last volume.

CYPRIPEDIUM × GODSEFFIANUM.—*Journ. Hort.*, Mar. 14, p. 223, fig. 40.

CYPRIPEDIUM × MADAME OCTAVE OPOIX.—*Lindenia*, t. 462.

CYPRIPEDIUM ROTHSCHILDIANUM.—*Journ. des Orch.*, Mar. 16, pp. 6, 7, fig. 89.

DENDROBIUM × APOLLO GRANDIFLORUM.—*Journ. of Hort.*, Mar. 21, p. 245, fig. 43.

DISA SAGITTALIS, Sw.—*Bot. Mag.*, t. 7403.

HABENARIA CARNEA and VAR. NIVOSA.—*The Garden*, Mar. 16, p. 182, t. 1005. We add the name of the variety, which is not given in the article.

HÆMARIA DISCOLOR VAR. DAWSONIANA ("Denisoniana").—*Rev. Hort. Belge*, Mar., pp. 61, 65, with plate, fig. 5.

LÆLIO-CATTLEYA × SAYANA, L. Lind.—*Lindenia*, t. 463. A dark form of Lælio-cattleya × elegans.

MACODES PETOLA, Bl. —*Rev. Hort. Belge*, Mar., pp. 61, 65, with plate, fig. 4.

MASDEVALLIA MELANOXANTHA.—*Gard. Mag.*, Mar. 16, p. 165, with fig.

MAXILLARIA LINDENIÆ, Cogn.—*Lindenia*, t. 464.

ODONTOGLOSSUM CORONARIUM.—*Gard. Mag.*, Mar. 2, pp. 126, 127, with fig.

ONCIDIUM INSCULPTUM, Rchb. f.—*Gard. Chron.*, Mar. 2, p. 297, fig. 39.

PHALÆNOPSIS × INTERMEDIA PORTEI.—*Gard. Mag.*, Feb. 23, pp. 110, 111, with fig.; *Journ. of Hort.*, Feb. 28, p. 179, fig. 34.

PHALÆNOPSIS × YOUNGIANA.—*Journ. of Hort.*, Mar. 7, p. 201, fig. 37.

PHYSURUS PICTUS, Lindl.—*Rev. Hort. Belge*, Mar., pp. 61, 62, with plate, fig. 2. VAR. ARGENTEUS, l.c., fig. 3.

SPIRANTHES ESMERALDA, Rchb. f.—*Rev. Hort. Belge*, Mar., p. 61, with plate, fig. 1.

STANHOPEA TIGRINA.—*Gard. Mag.*, Mar. 9, pp. 145, 149, with fig.

VANDA CŒRULEA.—*Garden*, Mar. 2, p. 145, with fig.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

OWING to the more genial weather which prevailed on the occasion of the Royal Horticultural Society's meeting on March 12th, a fine collection of Orchids was brought together at the Drill Hall, Victoria-street, Westminster,

among the more interesting being Mr. Cypher's magnificent Dendrobium × Apollo, several plants of Eulophiella Elisabethæ, about which so much has been written, a splendid specimen of Sophronitis grandiflora, and several wonderfully well grown Dendrobiums.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White) staged a very fine group, to which a Silver Banksian Medal was given. It contained Eulophiella Elisabethæ, a well-flowered specimen of the pretty Camaridium Lawrenceanum (Rolfe), a good plant of Epiphronitis × Veitchii, Epidendrum × Endresio-Wallisii, the handsome Phaius × Cooksoni, Pleurothallis Roezlii with four spikes, Cochlioda vulcanica grandiflora, Cirrhopetalum picturatum, Dendrobium nobile murrhiniacum, Cypripedium × Lawrebel, Masdevallia melanoxantha, M. Schrœderiana, M. × Shuttryana, and a batch of the pretty Calanthe Regnieri. Two plants received special awards. A magnificent specimen of Sophronitis grandiflora with over sixty flowers received a First-class Certificate, and also a Silver Banksian Medal for continued good culture. A note about it occurs on another page. The remaining plant was Masdevallia × Fraseri (M. ignea × coccinea), a brilliantly coloured form which received an Award of Merit.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), exhibited a group of five handsome Dendrobiums, to which a Silver Banksian Medal was given. Dendrobium × splendidissimum grandiflorum was a magnificent specimen, with stout pseudobulbs three to four feet long, and received a Cultural Commendation. D × splendidissimum Leeanum was even better flowered, some racemes bearing five flowers each, and larger than usual in size. The charming D. × Cassiope, which received an Award of Merit, also bore larger flowers than usual, as the result of exceptionally good culture. The other two plants were D. Findlayanum album and D. Linawianum.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford), sent the richly-coloured Cattleya Percivaliana magnifica, which received an Award of Merit, and a pretty form of Odontoglossum crispum, with dense brown spotting. It has been suggested as a possible hybrid, though we fail to see evidence of this.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), sent a small group of interesting things, and received a Vote of Thanks. A small plant of Cœlogyne sparsa, wreathed in flowers, received a Botanical Certificate. The others were a good Cochlioda vulcanica grandiflora, and cut flowers of Cattleya Trianæ, Phaius tuberculosus, and Dendrobium undulatum.

J. F. Alcock, Esq., Berkhamstead, sent Brassavola Martiana, Cypripedium × Harrisianum superbum, Cymbidium madidum, and Dendrobium undulatum, the latter receiving a Botanical Certificate.

Hamar Bass, Esq., Byrkley, Burton-on-Trent (gr. Mr. Hamilton), showed three well-flowered plants of Eulophiella Elisabethæ, which received a Cultural Commendation. A note appears on another page.

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent good forms of Cypripedium × Godseffianum and C. × Carnusianum, also a fine specimen of Platyclinis glumacea, which received a Cultural Commendation.

W. C. Clarke, Esq., Sefton Park, Liverpool (gr. Mr. Jones), sent a hybrid Cypripedium, said to have been obtained from C. × Leeanum superbum crossed with C. Stonei, which much resembled the former.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Jones), sent a fine Dendrobium Phalænopsis.

Earl Cowper, Panshanger (gr. Mr. Fitt), showed a good Cypripedium × Sallieri.

T. Craven, Esq., Ashted, Ashton-on-Mersey (gr. Mr. Higson), showed a fine specimen of Dendrobium Wardianum, with very long pseudobulbs, and well flowered.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), showed a dark coloured Odontoglossum × mulus atratum.

J. G. Fowler, Esq., Glebelands, S. Woodford, Essex (gr. Mr. Davis), showed three good forms of Cattleya Trianæ.

D. M. Grimsdale, Esq., Kent Lodge, Uxbridge, sent Odontoglossum crispum guttatum and O. Pescatorei.

A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling), showed Cypripedium × Ruth Ayling (C. niveum ♀ × Argus ♂) a pretty white form with purple spots.

C. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), sent Cypripedium × Crossianum aureum, a very pretty yellow form, and C. × refulgens (Curtisii × hirsutissimum).

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent cut racemes of several fine Odontoglossums, one called O. crispum nobilius being very fine and richly coloured.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent Cypripedium × Phœbe (C. philippinense × bellatulum), C. × selligerum atrorubens, and cut blooms of Dendrobium nobile nobilius and D. × splendidissimum Leeanum.

Mr. James Cypher, Queen's Road Nursery, Cheltenham, showed a splendid hybrid Dendrobium called D. × Apollo grandiflorum (D. nobile pulcherrimum ♀ × D. × splendissimum grandiflorum ♂, a very large and richly-coloured form, to which a First-class Certificate was awarded. A good D. × Ainsworthii was also shown.

Messrs. James Veitch & Sons, Chelsea, contributed a very interesting group, which received a Silver Banksian Medal. Three fine hybrids, which each received an Award of Merit, were Lælio-cattleya × Myra (Cattleya

Trianæ ♀ × Lælia flava ♂), Phaio-calanthe × irrorata rosea, a beautiful rose-coloured variety, and Dendrobium × euosmum virginale, a charming variety, with flowers nearly three inches across, which was described at page 112 of our last volume. The group also included D. × Cybele grandiflorum (D. Findlayamum ♀ × nobile nobilius ♂), D. × Ainsworthii intertextum, a very pretty form with a little yellow surrounding the maroon disc, D. × Edithiæ, D. atroviolaceum, Chysis × Chelsoni, Cymbidium × eburneo-Lowianum, Epidendrum × Endresio-Wallisii, and some hybrid Cypripediums.

Messrs. F. Sander & Co., St. Albans, exhibited a fine group of good things, to which a Silver Flora Medal was awarded. It included Cattleya Trianæ delicata, C. Schilleriana, Lælio-cattleya × Gottoiana, Lælia × Oweniana, Vanda teres Aurora, Pescatorea Lehmanni, Cœlogyne Sanderæ, Phaius × amabilis, P. × Marthæ, and P. × Cooksoni, the beautiful hybrids noted at page 86, several good Dendrobiums and Cypripediums, including the richly-coloured C × Fowlerianum (C. × Harrisianum superbum × bellatulum), to which latter an Award of Merit was given.

Messrs. Hugh Low & Co., Clapton, received a Silver Banksian Medal for a very effective group, including the beautiful Cypripedium × William Lloyd, C. Chamberlainianum, C. × enfieldense, and others, Saccolabium bellinum, Dendrobium Brymerianum, Lælia harpophylla, L. glauca, some fine examples of Miltonia Roezlii, &c.

Messrs. B. S. Williams & Son, Upper Holloway, also staged a fine group, to which a Silver Banksian Medal was given. The centre was formed of ten fine and well-flowered plants of Cœlogyne cristata alba, other plants being Cymbidium Devonianum, Odontoglossum × aspersum, Lycaste fulvescens, Angræcum citratum, Dendrobium Wardianum, and several Cypripediums.

Mr. P. McArthur, Maida Vale, exhibited a small group, including some good Dendrobium Wardianum, Cœlogyne cristata alba, Odontoglossum crispum, a good O. luteopurpureum and Cattleya Trianæ, and Cypripedium × Figaro, a Vote of Thanks being accorded.

CORRESPONDENCE, &c.

G. Beyer, Hamburg. 1 and 2, Zygopetalum crinitum; 3, Lælia anceps Hilliana, or scarcely different.

H. J. R., Florence. Æonia polystachya, Aërides virens. The Cypripedium parentage cannot be correct.

O. O. W., Bury. The protuberance on the lip of the Cypripedium sent is a deformity which we have seen in several other cases. The peculiarity is probably constitutional, having appeared at each time of flowering.

Dr. N. S. Odontoglossum × Coradinei.

We have received the general Catalogue of plants of Messrs. Pitcher & Manda, Short Hills, N. Jersey, which contains an excellent selection of Orchids, illustrated by about a score life-like figures prepared from photographs by the electrotype process, which is now so familiar to our readers.

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THE

ORCHID REVIEW:

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DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

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NOTES.

A MEETING of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on May 14th, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

The great annual Flower Show of the Society will be held, as usual, in the Inner Temple Gardens, Thames Embankment, on Tuesday, Wednesday, and Thursday, May 21st, 22nd, and 23rd, when a fine display of Orchids may be anticipated. A number of Silver Cups and Medals will be awarded according to merit. Intending exhibitors must give notice to the Secretary not later than Friday, May 18th.

A flower of the splendid Cattleya Trianæ Leeana, or what we take to be this, is sent by Mr. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone. It is a gigantic form of the species, with rosy mauve sepals and petals, the latter being three inches broad. The lip is proportionately large, and richly coloured, though in other respects typical. It is exceedingly handsome, and, according to description, agrees well with the original form.

A remarkably fine flower of Dendrobium infundibulum comes from E. H. Woodall, Esq., of Scarborough, which measures $5\frac{1}{4}$ inches from tip to tip of the petals, which organs themselves are $2\frac{1}{4}$ inches broad. It is the finest we have seen, and an excellent example of good culture.

An unnamed Cypripedium, which was obtained some time ago by Mr. F. W. Moore, of the Glasnevin Botanic Garden, as a native of the Sulu Islands, between Borneo and the Philippines, has now flowered, and proves

to be C. Lowii, Lindl. If the locality can be relied on, the occurrence is very interesting, as this species has hitherto only been known as a native of Borneo. We shall be glad to hear if anyone can confirm the locality. There seems to be nothing improbable in the matter, and very little is known of the Sulu Flora beyond the discoveries made by Mr. Burbidge some years ago.

Cattleya intermedia concolor is a very distinct and pretty variety which has flowered with Messrs. Hugh Low & Co., of Clapton. Its peculiarity is that the whole flower is light blush, including the front lobe of the lip, which is of a bright crimson-purple shade in the typical form, with which it affords a distinct contrast. It flowered out of a recent importation.

The last number of the *Bulletin de L'Herbier Boissier* contains descriptions of two Orchids from Kurdistan, by Dr. Kränzlin, under the names of Comperia Karduchorum and Cephalanthera kurdica. The last-named, however, is identical with C. cucullaria, Boiss. & Heldr., already known from the same region.

A note appears in the last number of the *Annals of Botany*, by Mr. G. Massee (p. 170), to the effect that the common Orchid disease known as "spot" is due to the presence of a species of Plasmodiophora (one of the Mycetozoa, or slime fungi), which will be known as P. Orchidis, and that a detailed account will appear in a later number. The promised account will be awaited with interest.

The same issue contains descriptions, by Mr. Rolfe, of nine new Formosan Orchids from the collections of Dr. A. Henry, who formerly sent such extensive collections from China. The Flora is very imperfectly known. The Bankingsing Mountains are 8,050 feet high, but Dr. Henry's collector only reached 2,000 feet, being in constant fear of the native savages.

A very pretty variety of Odontoglossum × Andersonianum has been sent by De Barri Crawshay, Esq., Rosefield, Sevenoaks. The flower measures fully three inches across the petals, and the ground colour is pure white, while the disc of each segment is covered with numerous bright chestnut-brown spots, being least numerous on the lip. It must be classed under the variety Jenningsianum. The clear colours and the arrangement of the spots give it a very bright and attractive appearance.

We are very glad to hear that the notes on the cultivation of the genera Bollea, Pescatorea, and their allies, given in our last volume, have proved useful. Dr. Hogkinson, of The Grange, Wilmslow, writes that his plants

are now growing well, in fact that few things in his collection are doing better. The evidence already given proves conclusively that if the natural requirements of the plants are looked after they will succeed well for practically indefinite periods, and continue to produce their handsome and remarkable flowers. The reputation of being intractable, which they formerly bore, evidently arose from wrong treatment.

Flowers of that charming little hybrid, Dendrobium × Cassiope, come from Mr. James Cypher, of Cheltenham. It combines all the good qualities of its parents, D. moniliforme (japonicum) ♀ and D. nobile albiflorum ♂; the flowers being pure white, with a light maroon blotch on the lip. The plant is of dwarf vigorous habit, and very floriferous, and it was certainly a very happy idea of Mr. Cookson's to cross these two forms together.

A flower of the remarkable and now well-known Dendrobium Brymerianum comes from De Barri Crawshay, Esq., Rosefield, Sevenoaks. It is a fine, well-developed flower, such as is usually produced when the species is well grown. What can be the use of the densely fringed margin, which is over ten lines long, and like some much-branched seaweed, we are quite at a loss to conceive, though it probably is in some way connected with the insect which fertilises the flowers. Observations on this and several other species in their native habitats would be interesting, and probably throw some light on the subject.

A very curious flower of the same species has appeared in the collection of A. J. Sanderson, Esq., Knowe Park, Galashiels, N.B., being, in fact, two flowers fused together. The pedicel, ovary, and column are twice as thick as usual, and flattened, consisting of two united side by side, and the latter bearing two perfect anthers with pollen. There are also two dorsal sepals, somewhat united at the base, but the lateral sepals, petals, and lip are normal in every respect, so that the effect of the union is not apparent in these organs. The fringe of the lip in this case is fully an inch deep.

Flowers of Catasetum barbatum have been received from John W. Arkle, Esq., Holly Mount, West Derby, Liverpool, who states that last year it produced totally different flowers, green and fleshy, and with globose lip, and these are rightly supposed to belong to the other sex. In fact these were the female flowers, while those now sent are the males. Both kinds are occasionally borne at the same time.

A curious freak of Selenipedium pulchellum has appeared in the collection of W. H. Lumsden, Esq., of Balmedie, Aberdeen, as we learn from the *Gardeners' Chronicle*. One flower is normal in character, and thus much like the rose-tinted S. × leucorrhodum, but another on the same

plant is said to bear a strong likeness to S. × macrochilum, but the colour cream-white with the tips tinted with pale lilac. This hybrid was raised in the collection of W. Vanner, Esq., from S. × grande ♀ and S. × Sedeni candidulum ♂, and was originally described at page 166 of our first volume, where the absence of any resemblance to the mother plant was pointed out, though enquiry had elicited the fact that there was no possible doubt about the parentage. The abnormal flower now shows the influence of S. × grande and of its progenitor S. caudatum, which is decidedly interesting.

A fine three-flowered raceme of Dendrobium Wardianum comes from R. C. Bayne, Esq., Glenmara, Wimbledon Park, and this gentleman points out a curious character respecting it which we do not remember to have noticed before. It is that in the evening it has an aromatic scent, something approaching cloves. This we have confirmed on two successive evenings, though the scent was not perceptible during the day time. It would be interesting to know if the character is general, and if it has been recorded before.

A plant of Cycnoches Egertonianum in the Orchid house at Kew is now bearing a raceme nearly two feet long, with fifteen of its remarkable dull purple flowers—all being males.

DENDROBIUM WARDIANUM.

We have received two striking forms of Dendrobium Wardianum from C. Winn, Esq., The Uplands, Selly Hill, Birmingham, which furnishes an opportunity to give a brief account of the forms of this handsome plant. The peculiarity of the first is the unusual size of the blotches on the lip, which measure half-an-inch in diameter, and the colour very deep blackish maroon, a character which perhaps merits a distinctive varietal name. It is typical in other respects. The second form is pure white with the exception of the yellow disc of the lip, on which occur two small very light-brown spots in the usual position. Strange to say this plant has always flowered before without any trace of the light-brown spots, being, in fact, the variety album. A similar form was exhibited by M. Madoux at a meeting of the Brussels Orchideene in April, 1894. Owing to the above circumstance it will be interesting to watch the behaviour of the plant in future, to see if the peculiarity is permanent.

The species was originally introduced from Assam by Simons, in 1856, and soon afterwards flowered in Messrs. Jackson's Nursery, at Kingston, and in one or two other collections, being at first figured as a variety of D. Falconeri, but afterwards under the above name—after Dr. Ward, of Southampton, who also flowered it.

The stouter Burmese form was introduced by Messrs. Hugh Low and Co., in 1875, and was figured and described as D. Wardianum var. Lowii (*Fl. Mag.*, n.s., 1876, t. 212), and afterwards as D. W. giganteum (*Orchid Album* iii., t. 113). This is the popular D. Wardianum of gardens, the slender Assam or typical form being much less frequently seen.

The variety candidum (Rchb. f. in *Gard. Chron.*, 1876, i., p. 460) which appeared in the collection of O. O. Wrigley, Esq., of Bury, has pure white flowers, with the exception of the usual yellow disc and the two eye-like brown spots.

The variety album (*Orchid Album* x., t. 450) appeared in the rich collection of W. R. Lee, Esq., of Audenshaw, in 1891, and differs from the preceding in having lost the brown spots, the yellow disc alone remaining. It has since been named variety Lindeniæ (*Lindenia* iv., p. 73, t. 419), on its appearance with Messrs. Linden three years later.

The Burmese form grows intermixed with D. crassinode and hybridises with it, giving rise to the beautiful D. × crassinodi-Wardianum, which was figured at page 177 of our last volume.

CŒLOGYNE HUETTNERIANA.

This pretty little Cœlogyne is now flowering in various collections, though in several cases under other names, hence it is advisable to place a few notes of its history on record. It is a native of Moulmein, and the next ally of the Himalayan C. flaccida, of which it is the geographical representative. It may be readily distinguished, however, by its shorter and broader leaves, and by some slight differences in the details of the flower, the Moulmein plant having also a rather stouter and less drooping inflorescence. It was described by Reichenbach in 1872 (*Flora*, lv. p. 277) from a specimen sent from Misna, in Saxony, by one Hüttner, after whom it was named. The locality was only vaguely indicated as E. Indies, but Reichenbach afterwards determined specimens collected in Moulmein by the Rev. E. C. Parish to be the same, stating that the latter had given the MSS. name of C. elegans to the plant. Under this name it was distributed, and in some collections is cultivated to the present day. Some thirteen years later it was unfortunately again described by Reichenbach as C. lactea (*Gard. Chron.*, 1885, i., p. 692), from materials sent by the late John Day, but three years later, on receiving specimens from Major Lendy, the author remarked (*Gard. Chron.*, 1888, i., p. 521) that he was not very sure if Parish's drawing might not belong to this. After comparing the drawing and a good series of specimens I have no doubt that all belong to one and the same species, as no difference whatever can be detected, and the above name should therefore be adopted.

R. A. R.

OBITUARY.

We regret to hear of the death, on March 26th, of W. S. Kimball, Esq., of Rochester, New York, U.S.A., in his fifty-eighth year, from abscess on the brain. He was a most enthusiastic Orchidist, and possessed a splendid collection, under the care of Mr. George Savage, one of the finest in the States, his collection of Cypripediums being particularly complete, and the quantity of C. insigne enormous, as pointed out at page 98. The houses were thrown open to the public daily from nine to four o'clock, an act of generosity of which thousands of people availed themselves.

Three days later Mr. Ignatz Försterman died at his residence, Newtown, New York, where for the last six years he had carried on the business of a nurseryman and Orchid grower. He was born at Coblenz, Prussia, in 1854, and after serving in various horticultural establishments on the Continent, entered in 1880 into an engagement with Messrs. F. Sander and Co. to collect Orchids. He started for India in the following year, and the tour lasted five years, during which he collected many novelties, including Cypripedium Sanderianum, Cœlogyne Fœrstermanni, C. Sanderiana, and others. His greatest achievement, probably, was the re-discovery of Cypripedium Spicerianum, an adventurous journey, in which one of his porters was killed by a tiger. He visited Burma, the Malayan Archipelago, Java, and the Philippines, and made a collection of some sixty species which he supposed new, and which are now buried in the Reichenbachian Herbarium at Vienna. On returning home he went to the United States to represent Messrs. Sander, but soon started business on his own account. His constitution was undermined during his adventurous journeys, and to the end remained indifferent.

ODONTOGLOSSUM APTERUM.

The identity of this Odontoglossum, which was described as long ago as 1824 (*La Llav. Nov. Veg. Descr., Orch. Opusc.*, p. 35), seems to have been quite lost, and it has been suggested that it is none other than the pretty little O. Rossii, one of the most generally distributed of the Mexican species. On looking up the original description, however, I find that this is impossible. It is said to be much like O. Cervantesii, but the pseudo-bulbs ancipitous, two inches or more long, and two or three-leaved. The flowers are white, with some roundish spots near the base of the segments, and the column without wings. These are precisely the characters of O. nebulosum, Lindl., which is evidently neither more nor less than the long-lost plant. It is satisfactory thus to be able to clear up its identity.

R. A. R.

DIES ORCHIDIANÆ.

THE appearance of the remarkable Bulbophyllum grandiflorum in cultivation, and the attendant circumstances, as recorded at page 104 of your last issue, seem to have caused a little commotion in the Orchid world. The *Gardeners' Magazine* feels bound to protest against the exhibition of a plant of this character under such a name as B. burfordiense, especially as it would have been easy for a competent botanist to identify it; as, indeed, it was identified when afterwards referred to Kew. "As it is," it proceeds, "we have a plant certificated and noted in all the horticultural journals under the absurd name of Bulbophyllum burfordiense which has been known to botanists for fifty years as B. grandiflorum. . . . There is a proper course to pursue with regard to new introductions of an interesting character, such as this Bulbophyllum, and the President of the Royal Horticultural Society should set a good example by following it. This go-as-you-please policy with regard to the names of plants is becoming the bane of horticulture as well as of botany."

The circumstance alluded to is, perhaps, the proverbial last straw, for this case is not by any means an isolated one. Probably the writer thinks the line must be drawn somewhere or somewhen, and, at all events, I hope his remarks will be productive of some good, though I confess I am none too sanguine about the matter, for last October I called attention to a very similar case. The Royal Horticultural Society have a rule that "Exhibitors showing, for the first time, a plant under a Latin name, should be required to furnish the name of the botanist who has described the plant"; and another that "The Orchid Committee should decline to recognise any unauthorised name . . . or one which is not applied in conformity with the preceding rules." It is true that another rule sets forth that an unnamed, or even incorrectly named, plant may receive an award, but the award is to be withheld until the requirements of the preceding rules have been met. Now, it is evident that in the case of Bulbophyllum burfordiense something went wrong somewhere, for we are told that a Botanical Certificate was awarded. The first rule had clearly not been carried out, yet the Committee recognised the unauthorised name; and if this was done by virtue of the third rule quoted, why was not the Certificate withheld until the name had been verified or the correct one found? Surely it is not too much to expect the Society to carry out its own rules?

Some of the papers say that the name was a provisional one. So it may have been, but it gets on record just the same, and is even described as a "*Nov. sp.*" in one of them, where, however, the term is not always applied in the usual sense, as I have more than once pointed out. But a

provisional name may, and sometimes does, become a permanent one, hence the importance of its being well chosen; and a name like the one in question, though suitable to indicate the origin of a garden hybrid, should not be given to a wild plant. It is a geographical name, and no more applicable to a plant from New Guinea than B. anglicum would have been because it flowered in England. But don't suppose for one moment that the present case is an isolated one, or any worse than plenty of others which could be pointed out.

This nomenclature question has come very much to the front of late. The other day I stumbled across the following notice in the *Gardeners' Chronicle*, which has some bearing on the above case:—"To Classical Scholars.—Wanted a provisional system of nomenclature for garden use applicable to imperfectly-known plants. It must be founded on Greek or Latin roots, preferably Latin; and it must be so constructed as not to clash with the ordinary specific Latin names given by botanists. For instance, numerous supposed natural hybrids, and, more excusably, many known artificial hybrids, now receive Latin names, indistinguishable as to their form from those which are used to designate known species. The consequence is unnecessary confusion, and an extremely overloaded synonymy. For artificial hybrids and garden varieties generally there is much to be said for the use of vernacular names."

Now, it seems to me that we have too many systems already, which are in danger of getting inextricably mixed, and I am not at all clear that a new one will be an unmitigated blessing. And as to the latter part of the notice, I would observe that the Royal Horticultural Society's Nomenclature Committee recently recommended that "hybrids, between species raised artificially should be named in Latin, with the addition of the word *hybridus,-a,-um*, or of the sign of hybridity, ×." It is my opinion that if this rule were loyally carried out we should be much better off than we are. In any case it is not the use of Latin names which gives the unnecessary confusion and extremely overloaded synonymy, but the multiplicity of different names for the same thing, to which I called attention at page 72. It is as well to lay the burden on the right shoulders, and whether it becomes more tolerable in the vernacular is a mere matter of taste.

But to return to the wanted new system. A week later came some suggestions from Mr. G. S. Boulger, who very rightly pointed out that there were already several systems in vogue. He recommended that the most practical step towards the solution of the difficulty would be to write "f," for "forma" or "form," before all garden names, or "h," for "hortorum" or "hortense." But even then he points out the desirability of using the

shortest procurable names, *i.e.*, Latin binomials. And he further adds that "where the parentage of a simple specific hybrid is known, there seems to be an overwhelming advantage on the score of precise information in the old compounded name, long though it be." As to the suggested alterations, I am afraid they do not amount to much. The abbreviation "Hort." is already in use, and well understood, which precludes its application in the way proposed, while "f" would not indicate that a plant was of hybrid origin. To indicate a variety it is not wanted, if a specific name is used, and is it in the least likely that those who omit the latter would trouble about the other? And florists' flowers should be, and usually are, named in the vernacular, so that here again "f" is unnecessary. Secondary hybrids might, perhaps, be treated as florists' flowers, always remembering that only such of these as are improvements on existing forms are named and kept, the rest being discarded after being proved.

A new system would either only add one more to those we have already, or else supersede the existing one, which is not in the least likely; and it seems to me that it would entail far less trouble to regulate the old one satisfactorily than to apply a new one. Don't, however, suppose that a new system would remedy existing evils, for the go-as-you-please policy would prove just as workable with a new system as with the old one.

ARGUS.

NOVELTIES.

PHAIUS ROEBLINGII, O'Brien, in *Gard. Chron.*, Mar. 23, p. 358.—So far as the description goes, this appears to be a fine form of Phaius Wallichii, approaching the variety Mannii, and, like it, is a native of Khasia. It flowered in the fine collection of the Hon. C. G. Roebling, Trenton, New Jersey.

SELENIPEDIUM DALLEANUM, André, in *Rev. Hort.*, Apr. 1, p. 164.—Acquired by M. Louis Dallé, Nurseryman, of Paris, at a sale, without any indication of its origin. It is a large and brilliantly coloured form, but whether a probable species or hybrid does not appear from the description, though we suspect the latter. Its relation to known forms is not indicated.

EULOPHIELLA ELISABETHÆ.

Referring to our note at page 65 on the above plant, to the effect that the flowers were not as large as those represented in the plate, the *Journal des Orchidées* remarks (page 36) that this proves that the plant was less vigorous, probably a little piece, and that flowers have been produced in the

collection of M. G. Warocqué, of sensibly larger dimensions than those of the plate in question. It may interest our contemporary to know that the flowers which called forth the remarks were as large as those produced by the original plant from which the plate was prepared, and that they were penned after an examination of over a dozen racemes from various sources. The largest flower on the plate is $2\frac{1}{4}$ inches across its broadest diameter, and the other nearly as large, while the living flowers measure little over $1\frac{1}{2}$ inches, even on plants to which special awards have been given, and we still await the advent of a flower over $2\frac{1}{4}$ inches in diameter. We consider the species a very beautiful one, but not on account of the size of its individual flowers, which it is a matter of notoriety are exaggerated on the plate, and against which we utter a decided protest.

NOTES ON THE GENUS CATASETUM.

A CONSIDERABLE amount of attention has recently been paid to the genus Catasetum, and a few notes on the subject will doubtless prove interesting, especially as several additional facts have come to light since the appearance of my paper "On the Sexual forms of Catasetum" (*Journ. Linn. Soc.*, xxvii., pp. 206—225, t. 8) over four years ago.

As long ago as 1817, five years before the genus was established, a Catasetum is said to have flowered at Kew, and two or three others soon afterwards appeared in cultivation. In 1826 was recorded for the first time the peculiar character for which the genus has ever since been remarkable, namely, the production of two kinds of flowers on the same inflorescence. In 1824, C. cristatum flowered in the garden of the Horticultural Society, and a figure was published in the *Botanical Register* (t. 966) two years later. Dr. Lindley then stated that he had observed two or three flowers on the same inflorescence, which had lost the crested and expanded lip characteristic of the species, and taken the peculiar galeate shape of C. tridentatum, which he elsewhere alluded to (*Collect. Bot.*, t. 40) as a most remarkable monstrosity, unlike anything he had seen in any other tribe of plants. The flowers are not represented in the plate, from which it is evident that they were produced on another inflorescence, probably at a later period. In any case the circumstance was sufficiently remarkable, for Lindley several years later doubted his own words, remarking that the statement appeared to him so extraordinary, especially as after seven years it had not been corroborated by any other case of the kind, that he concluded some mistake had been made (*Bot. Reg.*, t. 1947 A). The type of the figure is preserved in Lindley's Herbarium, and has only one kind of flowers, but the other raceme is not altogether lost, as I at first thought, for I find that flowers of each kind were sent to Robert Brown, and are now in the Natural History Museum at South Kensington.

In 1832 Lindley described two new genera from drawings and dried specimens in the Herbarium of Sir William Hooker, which had been sent from the neighbourhood of Rio de Janeiro, the plants being called respectively Myanthus cernuus and Monachanthus viridis. Lindley here remarked that perhaps Catasetum cristatum would be better referred to Myanthus. It is anticipating matters a little to say that on careful investigation I discovered the two plants just named to be the male and female forms of the species afterwards called Catasetum trifidum, Hook.

Four years later Lindley figured Monachanthus viridis, or what he supposed to be such (*Bot. Reg.*, t. 1752), from a plant sent from Wentworth by Lord Fitzwilliam, who assured him that it was beyond all doubt an accidental sport of Catasetum tridentatum. Lindley, however, was sceptical on the point, and contented himself with remarking that he was not aware when or by whom it was imported, but that it had probably been mistaken for a green form of the common Catasetum tridentatum, and consequently no record was kept. It was not until afterwards that he confessed to Lord Fitzwilliam's statement, and we now know that the latter was right. As a matter of fact it is not the original Monachanthus viridis at all.

The next development was startling in more ways than one. In November, 1836, Lindley received from His Grace the Duke of Devonshire an inflorescence of Catasetum cristatum, which he described as one of the greatest curiosities that our gardens had ever produced, namely, a plant of Myanthus cristatum changing into a Monachanthus, related to M. viridis, and combining in its own proper person no fewer than three supposed genera—Myanthus, Monachanthus, and Catasetum. The raceme bore sixteen flowers, of which the nine upper ones were those of the Monachanthus. The plant had flowered twice before without sporting, and on this occasion had also a second raceme of normal flowers. Lindley never guessed the significance of this so-called sporting, though, no doubt, he was right in supposing that a high state of cultivation favoured the peculiarity. He also observed that over twenty plants of Myanthus barbatus at Chatsworth, and the same number of Monachanthus discolor, had never sported, though a Mr. Hillhouse had informed the Duke of Devonshire that in Demerara a flower-spike of Catasetum often bore several kinds of flowers. The consequence was that Myanthus and Monachanthus had to be restored to Catasetum, "but which of the species," Lindley remarked, "have their masks on, and which show their real faces, I certainly will not presume to guess."

Schomburgk introduced a little more confusion, though he came nearer to guessing the truth than Lindley. In a paper published in the *Transactions of the Linnean Society* (xvii., p. 551, t. 29) he described and figured a plant which bore racemes of Myanthus barbatus and Monachanthus viridis (so-called) on the same pseudobulb, and also spoke of Monachanthus

viridis, both sporting into Catasetum tridentatum, and producing it when seeds of the former were sown. His conclusion was that all were forms of the same species. His other observations were significant. In a letter to Lindley he had asked :—"Are you aware that Catasetum and Myanthus are not seed-bearing, but that Monachanthus bears seed abundantly?" And in the paper just quoted he remarked :—"Here we have traces of sexual difference in Orchidaceous flowers. I have seen hundreds of Catasetum tridentatum . . . . without ever finding one specimen with seeds, while those bulbs which, according to Dr. Lindley's description, belonged to Monachanthus viridis, astonished me by their gigantic seed-vessels."

Darwin investigated the matter in detail, and arrived at the conclusion that the flowers of Catasetum tridentatum were males, those of Monachanthus viridis females, and that Myanthus barbatus represented a hermaphrodite form of the same species. The latter point I have shown to be erroneous. In arriving at his conclusions Darwin was evidently influenced to some extent by the observations of Lindley and Schomburgk, which are very misleading, though the latter never stated that he had seen the three growing on the same individual plant, as represented by Darwin. The fact is, Schomburgk confused the females of two different species under the name Monachanthus viridis, just as Lindley had done, which is the secret of all the confusion.

The original Monachanthus viridis of Lindley is the female of Catasetum trifidum, Hook., otherwise Myanthus cernuus, Lindl.; the one afterwards figured by Lindley at t. 1752 of the *Botanical Register* is the female of Catasetum tridentatum; and that figured by Schomburgk, and also Darwin, is the female of Catasetum barbatum, otherwise Myanthus barbatus, Lindl. It naturally follows that the latter is not hermaphrodite, but simply male, as I have repeatedly proved by careful analysis. His Monachanthus viridis is the female of the same, but his Catasetum tridentatum is the male of another species. And this does not quite end the matter, for Lindley remarked that Catasetum cristatum "had been found to sport into C. tridentatum" (*Bot. Reg.*, xxx., Misc., p. 39), which, of course, is erroneous. The simple fact is that the females of these four species bear so much resemblance to each other that they had been confused under one name. Thus we see that Catasetum has only two sexes, and that the title of Darwin's paper—"On the three remarkable sexual forms of Catasetum tridentatum"—is erroneous.

But while I was able to clear up the above confusion there was another recorded case, which for lack of material had to be left doubtful, though now an inspection of the original drawing enables the mystery to be cleared up. M. Barbosa Rodrigues had recorded having found a species of Catasetum, which bore flowers of Catasetum, Myanthus, and Monachanthus on the same individual. He called it C. heteranthum, though he admitted that the

Myanthus form was identical with Catasetum Gnomus, but as he gave no description of the essential organs of the others it was impossible to guess what they were. Having now seen his original drawing, I can say that the Monachanthus is the female of the species, and the Catasetum, so-called, is nothing but an abnormal and imperfect condition about midway between the two sexes, such as I have seen in two or three other species. The theory about three sexes, highly improbable from the very first, may now be considered as finally exploded.

In the paper before-mentioned I was able to enumerate sixteen species of which both sexes were known, and now six others can be added. The former list included C. atratum, C. barbatum, C. callosum, C. cernuum, C. cristatum, C. Darwinianum, C. deltoideum, C. Gnomus (C. heteranthum), C. macrocarpum (C. tridentatum), C. Naso, C. Œrstedii, C. pileatum (with which Reichenbach declares C. Bungerothii to be identical, though the point has since been disputed), C. Regnellii, C. sanguineum, C. umbrosum, and C. variabile. Those which have since appeared are C. ciliatum, C. discolor, C. fimbriatum, C. maculatum, C. Randii, and a species at first thought to be C. Hookeri, whose identity is not quite certain. Besides these, two or three females are known which have not yet been identified.

The genus contains four distinct groups or sections, which can now be more exactly defined that when my paper was written.

In the section EUCATASETUM the lip is uppermost and more or less galeate, or hood-shaped, in both sexes, and the rostellum of the male prolonged into a pair of antennæ, which, when touched, cause the ejection of the pollinia. C. macrocarpum and C. Gnomus are familiar examples. In both of these one antenna stands forward in front of the lip, and is alone sensitive, the other being turned round near the base of the column, and functionless. C. maculatum, C. Œrstedii, C. atratum, and several others have the same character. In a few other species the antennæ are both in the same plane, and equally sensitive, as in C. planiceps, C. albovirens, C. Lemosii, C. punctatum, and some others.

The second section is MYANTHUS, and differs in having the lip of the male flower underneath, and not galeate, though the female has the lip precisely as in Eucatasetum. A few species have the antennæ in different planes (as in C. macrocarpum), and one only sensitive, as C. Bungerothii, C. Christyanum, C. laminatum, C. saccatum, and C. tabulare. The majority, however, have them in the same plane, and both equally sensitive. Familiar examples are C. barbatum and its allies, C. callosum and C. fimbriatum, while C. Trulla, C. trifidum, and C. luridum may also be mentioned.

The third section is called ECIRROSÆ, and the only examples in cultivation that I know of are C. Russellianum, C. Warscewiczii, and

C. scurra. The male flowers have no antennæ, yet in C. Russellianum, the only one I have been able to examine carefully, the column is sensitive. When a particular part of the face is touched the stipes of the pollen immediately drop down, and the gland would inevitably become fixed to the back of any insect which had caused the disturbance. The lip is underneath, as in Myanthus. The females in this section are unknown, but they certainly occur, for the known flowers are male only.

The fourth section is called PSEUDOCATASETUM, and includes the familiar C. discolor, C. longifolium, and the rare C. ciliatum. C. roseo-album is scarcely more than a variety of the first named. This group was formerly a mystery, and as only one kind of flower was known, and the column was short and without antennæ, I had wrongly supposed the flowers to be hermaphrodite. After the appearance of my paper, Mr. E. S. Rand, of Pará, wrote to say that C. discolor produced a second kind of flower, probably the female; though no specimens were sent. In 1886 M. Barbosa Rodrigues also found an inflorescence of each kind on the same plant, and made a coloured drawing, which I have only recently seen. Four years later Mr. Jenman found the same thing in British Guiana, and sent specimens to Kew, in one case the two kinds being on the same raceme. And now Mr. Rand has sent a male and female raceme of C. ciliatum, which were produced on the same pseudobulb. It is therefore certain that the flowers of this group are unisexual, like the rest of the genus. The male flowers of C. discolor are well known, and have a galeate superior ciliate lip, and a short column without antennæ. The stipes of the pollen is strongly curved round a protuberance on the face of the column, and the gland tucked away in a cavity underneath, which, strange to say, leads right into the ovary. As I found it impossible to cause the ejection of the pollen by irritating the column, even on probing the cavity, I cut away the lip, which was in the way; but still without result. But, on introducing a fine wire with a curved point and gently turning it so as to touch the gland, the stipes instantly sprang forward and straightened itself. If an insect had inserted its tongue into the cavity, the result would have been the same, and the gland must have been attached to its body, and thus been carried off. And this, I believe, is what takes place. The female flower is twice the size of the male, but similar in general appearance. The column, however, is very stout, as in other females of the genus, and without any trace of the protuberance or cavity on its face, while the stigma is present and the pollen abortive. The female of C. ciliatum is very similar, and I now suspect that the mysterious C. cassideum (Lind. and Rchb. f. *Xen. Orch.*, ii., p. 171, t. 170, fig. 6) is the female of one of these two species. It would be interesting to know which grows on the Rio Negro. The female of C. longifolium is still unknown. It is very remarkable that the female of C. discolor has not been detected before, as it is frequently seen in

cultivation. This group appears to represent a more primitive stage of development than the others. In C. longifolium, however, a pair of short rudimentary antennæ are present.

I hope these notes may serve to call further attention to this very interesting but difficult group, and induce someone to get together a fairly complete collection. They are remarkable in structure, and a few even beautiful, while, if well grown, they would assuredly yield some surprises. Some are still very imperfectly known, but I hope in time to be able to complete my monograph of the genus.

R. A. ROLFE.

ODONTOGLOSSUM TRIUMPHANS LIONEL CRAWSHAY.

A flower of the splendid variety of Odontoglossum triumphans, called Lionel Crawshay, which received a First-class Certificate at the Royal Horticultural Society's meeting on April 9th, has been sent by De Barri Crawshay, Esq., Rosefield, Sevenoaks. It is characterised by its very broad segments, which give the flower a very full and round appearance. The dorsal sepal is ten lines broad, and not quite twice as long, and the slightly-toothed petals an inch broad at the widest part. The lip is a little narrower than the petals, and the blade nearly as broad as long, giving it a very round appearance. The flower is very heavily blotched with brown, which almost covers the sepals except at the tips. The disc and narrow margin of the lip are yellow, and the petals prettily variegated with the same colour between the large blotches.

ANGRÆCUM SESQUIPEDALE.

I enclose a photograph of the above-named plant, which is flowering very freely, and may be of interest to the readers of the *Orchid Review*. Last year this plant had twelve flowers, and now it carries sixteen. We grow it in the warm division, on the shady side of the house, removing it when in flower to the warm end of the Intermediate house. One of the flower spikes was produced from the stem below the leaves. The photograph was taken by one of Messrs. Beck's "Frenas," a most useful camera for plant portraits, as by using magnifiers you can take the photo at a distance of three to four and a half feet from the plant. The one I took was about the latter distance, and no focusing required.

H. GURNEY AGGS.

Pippbrook, Dorking.

[The photograph sent is an excellent one, and shows a well-grown plant of this useful winter-flowering Orchid.—ED.]

THE HYBRIDIST.

CYPRIPEDIUM × VANNERÆ.

THIS is a distinct and very pretty hybrid raised in the collection of W. Vanner, Esq., Camden Wood, Chislehurst, from C. Curtisii ♀ and C. × selligerum majus ♂. It has the general shape of the latter, but the petals are densely spotted from base to apex with deep purple on a light ground, in this respect resembling C. Curtisii. The dorsal sepal has nineteen deep purple-brown nerves on a lighter ground, and the staminode is concave and somewhat hairy, as in the pollen parent, but has the apical teeth of the other. The lip is $2\frac{1}{4}$ inches long, about intermediate in shape, light brown in front, and the side lobes less distinctly spotted than the petals. It bears unmistakeable evidence of its parentage.

CYPRIPEDIUM × ST. HILDA.

A hybrid raised in the collection of Colonel Marwood, of Whitby, by Mr. Horner, from C. Boxallii ♀ and C. Curtisii ♂. It most resembles the former, except that the dorsal sepal is distinctly ovate, and irregularly lined with about seventeen purple-brown nerves, partly formed of small confluent spots, and a few transverse reticulate nerves in the upper half. The ground colour is very light green and the narrow margin nearly white. The petals are spotted nearly to the apex with small purple-brown blotches, much like the hybrids derived from C. Boxallii and C. Argus. The lip and staminode bear much resemblance to those of C × Harrisianum. It is rather curious, but in nearly all the hybrids between C. Boxallii and a member of the tessellate-leaved group the characters of the former largely preponderate, and in the present instance it would be difficult to say which species with spotted petals was the second parent, but for Mr. Horner's record.

CYPRIPEDIUM × GOULTENIANUM ELEGANS.

This hybrid was raised in the collection of G. H. Goulten, Esq., Somerset Villa, Camley Park Road, from C. Curtisii ♀ and C. callosum ♂, as recorded at page 62 of our last volume. The reverse cross has how been obtained in the collection of C. Winn, Esq., Selly Hill, Birmingham, from whom we have received a flower. It evidently differs sufficiently from the original form to receive a varietal name, hence the above is proposed. It is a very compact and pretty flower, with the dorsal sepal over two inches long by half-an-inch shorter, nearly flat, and with about twenty-one nerves, of which the four outer ones on either side are purple and the remainder dull green. The petals are $2\frac{1}{4}$ inches long by $\frac{5}{8}$ broad, closely ciliate, the disc lined with dull green, and the rest purple, with some small purple-brown spots along either margin. The lip is $1\frac{3}{4}$ in. long, and much like C. Curtisii in colour, while the staminode is about intermediate in shape. It combines well the characters of the two parents.

PLATYCLINIS GLUMACEA VAR. VALIDA.

THE enclosed photograph is taken from a plant of the above-named Orchid, which has been in my possession for about ten years, and has grown from a small piece, with about five or six pseudobulbs, to its present size, producing thirty inflorescences. The mode of culture has been as follows:—The flowers are cut as soon as they are fully expanded, and immediate preparations are made for repotting. All the old peat is carefully removed from the roots, and any dead roots are cut away, leaving the dormant sound ones and those which show signs of activity. A perfectly clean pot is now

Fig. 6.—PLATYCLINIS GLUMACEA VAR. VALIDA.

chosen, of a slightly larger size than the old one, and this is filled so full of clean crocks that the rhizomes and roots come in contact with them when the plant is placed at the level it is to occupy in the pot. The small remaining space is now filled with pure fibrous peat (without any sphagnum or charcoal), which is pressed in as firmly as possible, in order to fix the plant in its position. After the potting is completed the plant is dipped in water, and then placed in a shady position in the East Indian house, to mature its half-finished growths, from which the flower spikes have been cut. Over-watering must now be guarded against, and during the time of

growth. After the growth is completed a very long rest is beneficial, during which time almost no water is required. When new growth appears more water must be given, but not too much, or spots soon appear on the foliage, and the beauty of the plant is destroyed. During the growing season the most suitable temperature is that of the East Indian house (65° by day and 60° by night, by pipe heat), but when at rest a temperature of five degrees lower will do no harm. The label was left in the pot by accident when the photograph was taken.

O. O. WRIGLEY.

Bridge Hall,
Bury.

[The photograph gives an excellent idea of the effect produced by a good plant of this graceful Orchid. Some time ago we received an excellent and very similar photograph from H. J. Hunter, Esq., of Edinburgh, showing a plant in a ten inch pot with thirty-six spikes. In this case, however, the plant was taken in company with various other things growing in the same house, and thus was not quite so suitable for reproduction as an illustration of a specimen plant. Both these photographs represent the variety valida (Rolfe) described at page 115 of our first volume, which is much more robust than the typical form, and has leaves nearly twice as broad, a peculiarity which had led to its being confused with the quite distinct species, P. latifolia. We believe that it originally appeared with M. A. A. Peeters, of Saint Gilles, Brussels. A remarkable plant of the typical form in the collection of Sir Trevor Lawrence, Bart., with 106 spikes, is described at page 111 of our last issue, where it will be observed that Mr. White follows a somewhat different course of treatment to that described above, and with equally successful results. Our experience is that it is a plant of easy culture under ordinary treatment, and almost invariably produces numbers of graceful spikes at the proper season. Two or three other species of the genus are equally worthy of any pains spent on their cultivation.—ED.]

ONCIDIUM LANCEANUM.

Writing on the occurrence of the above handsome Orchid in Trinidad, Mr. W. E. Broadway, of the Grenada Botanic Garden, observes (*Gard. Chron.* p. 423) that formerly it used to be found in large quantities at one end of the island only, at a place called Cedros, which gave to it the local name of "Cedros Bei." Now and then the extremely rare Oncidium hæmatochilum is found with it, and about a year ago a collector brought to Port of Spain five plants of this much sought-for species, which he sold for 5s. or 7s. on the spot. Locally, one can buy very reasonable sized plants of O. Lanceanum for 2s., but where once this fragrant Orchid could be

collected in thousands it can only be found in dozens to-day. The fine Diacrium bicornutum that was the glory of some of the smaller islands belonging to Trinidad, is also fast disappearing through the raids of the collector, a remark which also applies to Oncidium Papilio. This note points to the possibility of the ultimate extermination of these beautiful plants, and we hope the Trinidad Government will follow the precedents set elsewhere, and take any steps necessary to prevent such a misfortune.

NOTES ON CERTAIN VARIETIES OF DENDROBIUM NOBILE.

A FEW notes regarding the different named varieties of Dendrobium nobile may be of interest now that so many of them are in flower. The following are made with the flowers of the different forms collected together side by side for comparison, and the varieties are arranged so as to show the distinctive grades—from richest purple to purest white. The measurements are my own, and are taken from tip to tip of the petals; but, of course, the size of flowers will vary slightly in cultivation, in consequence of the different ways in which the plants are grown.

1. *D. nobile nobilius*. [Flower from original plant from Sir Trevor Lawrence, $3\frac{1}{2}$ inches.] This flower exactly agrees with the drawing of the original plant (*Orchid Album, plate 214*), the colour being of the richest wine purple, the shape of the flower round and excellent, the petals well filling in the space between the sepals. Lip with deep maroon disc, surrounded by a band of white, with rich apical blotch of deep purple.

Ditto. [Flowers from other sources, 4 inches.] Exactly the same in colour, and of grand size, the extra breadth of the flower caused by the petals being more elongated and not so well filling up the space between the sepals as in the original plant.]

[NOTE.—Although both these are undoubtedly D. nobile nobilius, I believe they originate from distinct plants. On repeated flowering I find the same differences, Sir Trevor Lawrence's plant being the most pleasing in consequence of its perfect shape.

2. *D. nobile Sanderianum*. [Flower from Sander, $2\frac{1}{2}$ inches.] This is extremely like the original nobile nobilius, but the flowers are smaller and the two petals overlap the sepals more than in any other variety, and thus give the same a very distinctive character.

3. *D. nobile elegans*. [Flower from Sander, $3\frac{1}{4}$ inches.] Symmetrical in form, richly coloured as in nobilius, but white at the base of the flower, petals broad overlapping the sepals, but not so much as in Sanderianum. A rich coloured form.

4. *D. nobile purpureum*. [Flower, 3 inches.] This form flowered with

me and Messrs. Linden at the same time (see description in *Gardeners' Chronicle*, March 11th, 1893, p. 300). Colour extremely rich deep purple, white at the basal half of the flower. Lip very long and sharp pointed, and with a very bright deep purple apical blotch. Near, in my opinion, to elegans, but distinct.

5. *D. nobile Ballianum.* [Flower from Sander, 3¼ inches.] Flowers white with the slightest tinge of colour at the apex. Disc of the lip of the faintest rose violet surrounded with a light primrose zone.

6. *D. nobile murrhiniacum.* One of the most beautiful of Dendrobiums, like Ballianum but immensely superior, apical area slightly tinged with violet, disc of lip very rich violet finely veined with rose violet, giving the plant a most beautiful appearance. Flowers size of Ballianum, but of more exquisite shape.

7. *D. nobile pulcherrimum.* [Flowers, 3 inches.] Surface of the flowers like polished ivory, apical area slightly rosy, disc of lip dark maroon.

8. *D. nobile Cypheri.* [Flowers from Cypher, 3¼ inches.] Like pulcherrimum, but instead of the tips of the sepals only being rosy the whole of the back is rosy to the base, giving the variety a very distinct character; the lip also is very broad, showing a fine whitish zone round the dark maroon disc.

9. *D. nobile pendulum.* [Flower from Cypher, 3¼ inches.] May be described as very near to Cypheri, but with more colour and a large maroon disc with narrow white zone on the reflexed lip.

10. *D. nobile Statterianum.* [Flower from Cypher, 3¼ inches.] A fine flower very near to Cypheri, the distinction being that the lip is pointed and not reflexed.

11. *D. nobile Schrœderianum.* [Flower, 3 inches.] Very near to albiflorum, but not so absolutely white, with a slight stain of colour at the apex of the lip.

12. *D. nobile albiflorum.* [Flower from Sander, 3¼ inches.] Lovely and perfect in form, of the purest white, without a trace of any other colour —except the disc of the lip, which is blackish purple, giving the flower a very striking appearance.

13. *D. nobile intermedium.* I have not a flower of this available to measure, but it is small. I mention it as a very distinct old variety, known for many years to gardeners under this name. I have a plant of it, and Mr. Mills, of Bisterne, Ringwood, has a fine specimen, I don't know in what other collections it may be, but old growers will recognise it under the name given. It does not agree with the variety album, described by Reichenbach in *Gardeners' Chronicle*, March 15th, 1884, as that variety was stained with colour along the edges. The flower is of the purest white, and the disc of the lip is of a delightful violet colour—quite different from Ballianum and very much smaller.

I have not mentioned the sports — *D. nobile Cooksoni* and *D. nobile Tollianum*—as they are so distinct that no one can mistake them. Nor have I thought it necessary to describe old varieties like Wallichianum and cœrulescens; indeed, with the many now like them they are scarcely distinct enough to be noticed. The various forms of giganteum are very beautiful, but it remains to be seen whether they will remain true in size; some of them may probably hereafter deserve a distinct name.

The above, I hope, may be of use to growers, but I by no means claim for these notes that they are perfect or complete, probably there are other varieties with which I am unacquainted, which ought to have been included.

EMERIC S. BERKELEY.

We have also received several of the above varieties from Mr. Cypher, and from W. S. McMillan, Esq., of "Ardenholm," Maghull, Cheshire. With respect to D. n. Cypheri we may add that the flower sent by Mr. Cypher is not D. n. albiflorum, as the note at page 106 would imply, and the question is whether the flower formerly received was authentic. We are not sure whether the characters of this variety have been previously recorded. The true D. n. albiflorum is well figured at page 113 of our last volume. D. n. intermedium, from the description, must be very similar, and we should like to see a flower. D. n. nobilius, D. n. Sanderianum, and D. n. Cooksoni are also figured on the page just mentioned, together with what fairly represents the typical form. The two dark forms have not come out very well, but their relative size and shape shows them to be very distinct, though so much alike in colour. The D. n. albiflorum described above seems to be a finer thing than the form we figured, and may be nearer D. n. Amesiæ.

It may be interesting to add a few notes on other described varieties, so as to make this account as complete as possible, for the subject is one of universal interest, and we have frequently received flowers with requests for names, and, like others, have felt the need of a connected account of existing varieties.

The species was originally introduced from South China, and flowered with Messrs. Loddiges in 1837, but soon afterwards plants came from the Khasia Hills, and now it is known to occur also in Sikkim, Bhotan and Tibet, so that it occurs over a rather wide area. The typical form is too well known to require description.

D. N. CŒRULESCENS (Rchb. f. in *Walp. Ann.* vi., p. 283) has rather smaller light rose-purple flowers, and the lip narrower with a more oval blade. It was sent to Chatsworth by Gibson in 1837, and flowered soon afterwards.—D. cœrulescens, *Lindl. Sert. Orch.*, t. 18.

D. N. WALLICHIANUM (*Will. Orch. Gr. Man.*, ed. 7, p. 354) is defined as

having tall stems, darker foliage, and flowers richer coloured than in the type. A drawing which we have seen much resembles the preceding, especially in the shape of the lip.

D. N. ALBUM (Rchb. f. in *G. C.*, 1884, i., p. 338). Sepals and petals white with pallid purple tips; apex of lip very pale purple. Appeared with W. Lee, Esq., Leatherhead.—*Orchidophile*, 1890, p. 304, with plate, fig. 2.

D. N. AMESIÆ (*Orch. Rev.* i., p. 115). A large pure white form with large rich maroon disc. It is much finer than D. n. albiflorum, but similar in colour. Appeared with Messrs. F. Sander & Co. in 1893.

D. N. SCHNEIDERIANUM (Rchb. f. in *G. C.*, 1884, i., p. 577) has a yellow hue over the lip, and a dark mauve-purple mark at the base. Appeared with Mr. Oscar Schneider, of Fallowfield, Manchester.

D. N. TOLLIANUM (Rchb. f. in *G. C.*, 1884, i., p. 445). An abnormal form with the pedicels twisted, the flowers appearing inverted and the segments not fully expanded. Appeared with Mr. G. Toll, of Manchester, and with W. Lee, Esq., of Leatherhead.

D. N. COOKSONI (Rchb. f. in *G. C.*, 1885, i., p. 692). Petals having a maroon blotch at the base, and less expanded than usual. Appeared with Norman C. Cookson, Esq., Wylam-on-Tyne, and shortly afterwards in two other collections.—*Journ. of Hort.*, 1890, i., p. 63, fig. 10; *Orch. Rev.* i., pp. 113, 115, fig. 15.

D. N. BURFORDIENSE (*Garden and Forest*, 1894, p. 159). Lateral sepals with a maroon blotch on the lower half near the base. Appeared with Sir Trevor Lawrence, Bart., and with Hicks Arnold, Esq., of New York.—D. n. Burford variety, *Journ. of Hort.*, 1890, i., p. 63, fig. 9.

A similar form to the preceding, but with much larger flowers and broader rounder segments, appeared with C. J. Carpender, Esq., of New Brunswick, N. Jersey, in 1889. An exceptionally fine form.

A rather curious point arises with regard to the plant described by Griffith as D. Lindleyanum (*Griff. Notul. Pl. Asiat.* iii., p. 309). It is an unusually large and richly coloured form from the Khasia Hills, and apparently includes D. n. nobilius. For many years all the plants of the latter in cultivation had been derived by propagation from the original one, but now it has been re-introduced in a form not absolutely identical with the original, and a plant which flowered for the first time in the collection of the late G. Hardy, Esq., in 1889, is still finer. May not this and the so-called D. n. giganteum belong to Griffith's plant? It appears to be a local form of D. nobile. The figure cited by Griffith and a second species of the same name (*l.c.*, p. 311) belongs to D. Dalhousieanum.

Lastly, may be mentioned a very large but lighter coloured form, which appeared in the collection of W. W. Lunt, Esq., of Boston, U.S.A., some time ago, which we should like to see again. It appears to belong to D. nobile, but is distinct from anything we know.

CALENDAR OF OPERATIONS FOR MAY.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

PLANTS in all departments are now making new growth, and no time should be lost in giving them every encouragement to grow briskly. To assist in bringing this about the Summer temperatures should now be pretty strictly adhered to. The figures which we shall endeavour to maintain as nearly as possible, when the outside conditions are genial and summer-like, are given below, but should a spell of cold inclement weather prevail, we would rather have a few degrees lower than use an excessive amount of fire heat.

COOL HOUSE.—By day as low as possible, night 55° to 60°, morning 55° to 58°.

INTERMEDIATE, CATTLEYA, and MEXICAN HOUSES.—By day 70° to 80°, night 65° to 70°, morning 60° to 65°.

EAST INDIAN and DENDROBIUM HOUSES.—By day 75° to 90°, night 75°, morning 70° to 75°.

Cleaning, repotting, top-dressing, and smartening up the plants generally, will be the work of the month, which will therefore be a very busy one. Having accomplished this work and placed the plants in their summer quarters they will then be able to grow their best uninterruptedly. Every effort should be made to perform this necessary work at the proper time. The system of taking the structures in rotation is good for some purposes; such as washing and cleaning the dirty pots, the wood-work, glass. &c. But repotting should not proceed upon this system, regardless of the various requirements of the plants, and their various seasons of growth, or the result would be disastrous. What, for instance, would be the result, if we went through the Intermediate house in May and repotted every plant? Such a house would contain a great number of totally different species, all delighting in the same temperature and atmospheric conditions, but not all in the same stage of growth. There would doubtless be Cattleya Trianæ, for which May would be a good time, but for Lælia crispa, August would be more correct. Then, again, Miltonia cuneata could be repotted with perfect safety, but what would happen if M. vexillaria was disturbed until after it had flowered, about June or July?

The repotting, or supplying new fresh material to the roots of Orchids is a work of great importance, and must necessarily be performed at intervals ranging from one to two and sometimes three years, in order that the plants may keep in a continued healthy and vigorous condition. But there is yet another very important work, namely, keeping them scrupulously clean from insect pests. If the grower should find himself so pressed at this time of year—a by no means uncommon occurrence—and know that either the cleaning or the potting must wait, I would advise him to attend to the former, and leave the latter, doing it, however, as near the proper time as possible. For what can be worse than to have plants of, say Cattleya or

Lælia, infested with that pernicious scale which collects in the axils of the leaves, or on the pseudobulbs under the dry skin, and all round the tender dormant eyes? How quickly this scale, if allowed to congregate in force, will attack and ruin the constitution of the strongest plants, and make them an easy prey to other deteriorating influences, should never be lost sight of.

Newly imported Orchids are luckily quite free from this scale, and generally for a few years are so robust as to defy its ravages. But beware! It may come in time, and it is when they have been under cultivation for a few years and no attention paid to cleanliness that trouble in this direction begins. The best safeguards are good cultivation, which tends to maintain health and vigour, and a frequent and diligent search for the pest, so as to prevent it from once getting established, for if it does so surely will the plants suffer. The best method for cleaning infested plants which I have yet discovered is painting them over by means of a small pallet brush with a solution of Murray's Electric Insecticide, using four to five parts of water to one of the mixture.

I have previously said that newly imported Orchids are generally clean, and in many instances free growing, and very easy of culture as compared with old established ones. The better the culture, and the freer they are kept from insect pests the longer will they remain in such vigorous health. It is plain, therefore, that much depends upon the pains taken by the cultivator from the outset to keep the plants under his charge in the best possible condition. I have also pointed out that judicious repotting is another means of gaining this end, and no better time than the present could be selected for a few more words on the subject, as so much repotting will be necessary during this and next month. It is a well-known fact that Orchids do experience a check, more or less, however carefully the operation may be performed. In the case of strong healthy plants it is scarcely perceptible, but with those which have got into a weak state, the check received is often of a very serious nature. With such plants a whole year will frequently elapse before any decided improvement is noticeable, and, indeed, they may not even then fully recover unless kept quite free from the scale before mentioned and other pests, which attack weakly plants far more than those which are strong and healthy. Therefore I say avoid this most undesirable check by repotting in good time, and I emphasise the point, because beginners are sometimes reluctant to risk disturbing the roots as long as a plant appears healthy, preferring as they think to leave well alone. But if the plants are not taken in hand until unmistakable signs of suffering are visible, repotting will not immediately set things right again, as is often thought. Such plants will surely look worse before they look better, in spite of the very best of treatment, for the remedy was applied too late. An anxious time follows, shrivelling sets in, and perhaps a few leaves are lost, and altogether they present an uncomfortable appearance. But

under judicious treatment they sooner or later regain their strength, and again delight the eye by sending forth clean and healthy growth.

We are now finishing off our Dendrobium house, by examining all the late sorts which have passed out of flower and repotting where necessary. Likewise the autumn and winter-flowering sorts, such as D. Phalænopsis, D. bigibbum, D. superbiens, D. formosum giganteum, &c. These are grown in small pans or baskets and suspended near to the glass in a light and warm place. After placing a few crocks for drainage at the bottom, we place the plants in position, and fill in loosely between the roots with a compost of live sphagnum moss and the best fibrous peat, always taking great care to secure the plant from swaying about when handled by tying the pseudo-bulbs to the suspending wires of the basket. Water is applied at this date pretty freely from the first, as Dendrobiums delight in a large supply when growing, and now that the season is getting well advanced, instances of the young breaks damping are very rare.

There are some species of Dendrobium from the far east, which, though perhaps not beautiful, are yet decidedly pretty and interesting. I refer to such as D. veratrifolium (lineale), D. stratiotes, D. strebloceras, D. taurinum, D. D'Albertisii, &c. These species are very floriferous for a time, but they have a peculiarity of contracting a disease which appears most unexpectedly in the form of black streaks and blotches on the rhizome and pseudobulbs, both young and old. This disease is rendered all the more mysterious because the plants have previously grown so luxuriantly, and increased in size year by year. They will appear to be in the best possible health, but suddenly they become attacked, and if not taken in hand at once and the diseased portions wholly removed, they quickly die. There are two possible causes that I can suggest; either the plants getting too wet and cold during winter, or the roots getting into a bad condition by the compost becoming sour. They should be grown as recommended for D. Phalænopsis.

The Cool houses are specially inviting at this season, not only are the Odontoglossum crispums and the Masdevallias making a good show of bloom, but other cool growing Odontoglossums and Oncidiums are pushing forth new growth, which, if previous instructions have been observed and followed, should look sturdy and promising; a state of affairs equally delightful to the enthusiast as are the flowers themselves. Thanks to "Richardson's XL All vaporising insecticide" we are at last able to keep this class of Orchids perfectly clean and free from yellow thrips and aphis, which were formerly so troublesome, and required so much time and patience to keep under by the ordinary methods of dipping, dusting with tobacco powder, &c. If used with ordinary intelligence no harm can possibly follow, but if the instructions are ignored, resulting in the spirit igniting, the plants in the near vicinity of the flames will be dreadfully scalded. Ventilate those houses freely, give due attention to the shading,

and thoroughly damp down at least three times daily. The plants should now never be allowed to remain dry, but be well watered with soft water whenever the compost shows dryness. A slight syringing overhead occasionally will also now be beneficial. Repot all species when necessary, as soon as new growth commences, which may be any time from now until the autumn. Those not requiring it should be surfaced with fresh sphagnum moss. All of the small growing species such as Oncidium concolor, O. Forbesii, O. varicosum, Odontoglossum Rossii, O. Cervantesii, &c., are better suspended near the roof.

The Cattleya and Mexican houses must likewise have no lack of attention. Here also damp down three times daily, ventilate carefully, and shade as required, remembering that Mexican house Orchids require but little shade. The syringe may also be employed beneficially, a gentle spray overhead at this season, once or twice a day in fine weather having an invigorating tendency, and greatly assists the plants to push quick clean growths. Remove the blinds as early in the afternoon as all danger of scalding from the sun is past, and at the same time reduce the amount of air, which will generate a warm, moist, and genial growing atmosphere, and infuse new life and vigour. Proceed with the necessary repotting as soon as the flowering is past. Such species as Cattleya labiata, C. Harrisoniana, C. guttata, C. granulosa and allies, which flower too late in the autumn to be then repotted, should also now be done.

Barkerias are now starting to grow, and do best in baskets or on blocks, with sphagnum about the roots. They should be suspended in the Mexican house in full sunshine, where they will get a good current of air, and well syringed at least twice a day. Pleione lagenaria and P. maculata grow well in the same position if slightly shaded, and also enjoy the syringe. P. Wallichiana may be grown in a slightly cooler position, while P. Hookeriana and P. humilis succeed best in the Cool house. Thunias are now growing apace, and should likewise be near the glass in full sunlight in the same house, but kept somewhat on the dry side in order to ensure flowering. Exercise care when watering the deciduous Calanthes, as if waterlogged at this date they never recover. When better rooted more water may be given, and also a little liquid manure. Give them a light position in the warmest house, where the sun's rays are broken by a thin shading.

Cypripediums, Vandas, Saccolabiums, Renantheras, Phalænopses, Anœctochili, Angræcums, and Aërides will now delight in deluges of water at the roots. As soon as the sphagnum moss into which the plants are fixed—which should be fresh and in a growing state—shows the slightest signs of dryness by commencing to look white, it should receive a thorough drenching from a watering-can. It is superfluous to say that the atmosphere should also be kept well-saturated by frequent damping down. Growth will then proceed merrily, providing shading is employed during

sunny weather only, and the ventilation well attended to. This is important, as otherwise the growth will be sappy and unmatured, resulting in "spot" and decay in its various forms. Renanthera coccinea is a scandant growing species, and, like Vanda teres and Vanda Hookeri, should be allowed to ramble and grow in the full glare of the sun. Phaius tuberculosus is now starting to grow, and is an Orchid which delights in fresh living sphagnum moss, in which the roots will ramble. The pots or baskets should be three parts filled with drainage, on which the roots should be placed, afterwards filling up level with the rim with moss, intermixed with a few lumps of fibrous peat and broken charcoal. Place it in lightly, so that the water can pass through quickly, for this is another Orchid which requires frequent supplies of fresh water. It grows best in a somewhat shady and moist part of the East Indian house. P. Humblotii and P. grandifolius require the same treatment, with the exception that the compost may have a larger addition of peat, and the plant given more light. Zygopetalums are Orchids of easy culture, and the spring is the best time to repot, before the new growths get too far advanced. For such species as Z. Mackayi, Z. crinitum, and Z. intermedium, it is usual to mix with the peat and moss some lumps of fibrous loam. Crock the pots about half full, and pot lightly. Others, such as Z. maxillare and Z. Gautieri, are sometimes grown on tree fern stems, but I think of the two, basket culture is the most successful. Zygopetalums delight in plenty of water during the growing season, but during the winter they should be watered carefully. They should be grown in the Intermediate house.

ORCHID PORTRAITS.

Aerides cylindricum.—*Gard. Chron.*, March 30, p. 393, fig. 52.

Bollea Schrœderiana.—*Journ. of Hort.*, Apr. 4, p. 287, fig. 50; *Gard. Mag.*, Apr. 6, p. 199, with fig.; *Gard. Chron.*, Apr. 20, p. 497, fig. 70.

Brassia "Lawrenceana."—*Journ. of Hort.*, Mar. 28, p. 275, fig. 48. The figure represents Brassia brachiata, Lindl., not B. Lawrenceana, Lindl.

Bulbophyllum grandiflorum, Blume.—*Gard. Chron.*, Apr. 6, pp. 422, 429, fig. 59; *Gard. Mag.*, Apr. 6, pp. 199, 202, with fig.

Cœlogyne sparsa, Rchb. f.—*Gard. Mag.*, Mar. 30, p. 188, with fig.

Cypripedium Charlesworthii, Rolfe.—*The Garden*, Apr. 13, p. 252, t. 1009.

Dendrobium × Apollo grandiflorum.—*Gard. Mag.*, Mar. 30, pp. 188, 189, with fig.

Dendrobium Jamesianum.—*Gard. World*, Apr. 20, pp. 536, 537, with fig.

MASDEVALLIA MELANOXANTHA, Rchb. f.—*Gard. Chron.*, Mar. 23, p. 35, fig. 46.

ODONTOGLOSSUM TRIUMPHANS LIONEL CRAWSHAY.—*Journ. of Hort.*, Apr. 11, pp. 307, 322, fig. 53; *Gard. Chron.*, Apr. 20, p. 489, fig. 69; *Gard. Mag.*, Apr. 20, p. 237, with fig.

ONCIDIUM GRAVESIANUM, Rolfe.—*Revue Hort. Belge*, Apr., p. 73, with plate.

PHAIO-CALANTHE × IRRORATA ROSEA.—*Journ. of Hort.*, Apr. 18, p. 331, fig. 56.

PHALŒNOPSIS SCHILLERIANA (abnormal flower).—*Gard. Chron.*, Mar. 23, p. 367, fig. 49.

SOPHRONITIS GRANDIFLORA.—*Gard. Chron.*, Apr. 20, p. 492, with plate.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

AT the meeting of the Royal Horticultural Society held at the Drill Hall, James Street, Westminster, on March 26th, there was a fine display of Orchids, the most remarkable being the giant-flowered Bulbophyllum grandiflorum described at page 104 of our last issue, a magnificent specimen of Dendrobium nobile nobilius, and several other fine things to which special awards were given.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a small group of rare Orchids, to which a Silver Banksian Medal was given. It contained the remarkable Bulbophyllum mentioned above, which, however, was exhibited under the provisional name of B. burfordiense, and was unanimously awarded a Botanical Certificate; a very fine specimen of Eulophiella Elisabethæ, the rare Dendrobium cruentum, D. canaliculatum, Vanda cœrulescens, Schomburgkia crispa, and the elegant little Odontoglossum crinitum sapphiratum, to which a Botanical Certificate was given.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent a group of fine cut Orchids, to which a Silver Banksian Medal was awarded. It contained the rich orange-coloured Lælia × vitellina, Epidendrum × dellense, a splendid spike of Odontoglossum × Andersonianum Leeanum, O. luteopurpureum, the beautiful white Cattleya Lueddemanniana Schrœderi, C. Schrœderæ, Sobralia macrantha, Lycaste Skinneri, and two beautiful forms of Dendrobium superbum, the pure white D. s. Dearei and the blush-white D. s. Dearei.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), staged several very fine Dendrobiums, including a well-flowered plant of the rare D. gratiosissimum; two forms of D. nobile, called D. n. Ashworthii, richly coloured, and D. n. Ashworthiæ, nearly white; D. × Schneiderianum, to

which an Award of Merit was given; and a magnificent specimen of D. nobile nobilius, with stems 3 feet 9 inches high, and bearing 389 flowers. To this a Silver Banksian Medal was awarded as a mark of special good culture.

J. Bradshaw, Esq., The Grange, Southgate, sent a good spotted form of Odontoglossum crispum, and a beautiful Dendrobium, called D. × Donnesiæ, a supposed natural hybrid between D. formosum and D. infundibulum. The stems were short and stout, and the flowers white, with a chrome yellow blotch at the base of the lip.

W. R. Lee, Esq., Beech Lawn, Audenshaw, Manchester (gr. Mr. Billington), received an Award of Merit for a handsome form of Dendrobium × splendidissimum, with rose-tinted flowers, called D. × s. illustre.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), obtained an Award of Merit for Cypripedium × Olenus, a very pretty hybrid derived from C. bellatulum ♀ and C. ciliolare ♂. The flowers are well formed, tinted with rose, the petals dotted with purple, and the dorsal sepal lined with the same colour.

W. C. Parkes, Esq., Llanberis, Lower Tooting, showed a large form of Cattleya Trianæ, with very richly-coloured lip, to which an Award of Merit was given.

H. Weetman, Esq., The Hawthorns, Little Haywood, Stafford (gr. Mr. Dun), showed several forms of Dendrobium nobile, and Odontoglossum luteopurpureum amplissimum, to which an Award of Merit was given.

Mr. W. Bennett, The Gardens, Rangemore, Burton-on-Trent, exhibited Cypripedium × bellatulo-venustum, which bears some resemblance to C. × Marshallianum.

C. T. Cayler, Esq., Ivy Mount, Leigham Court Road, Streatham, showed two fine specimens of Phaius grandifolius.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), showed Odontoglossum Ruckerianum Juno, a fine form with richly-spotted rose-tinted flowers.

The Rev. E. Handley, Bath (gr. Mr. Kerslake), showed Cattleya Trianæ delicata, and a richly-coloured form of the same species.

T. W. Swinburne, Esq., Corndean Hall, Winchcombe, showed Cypripedium × Lady Hutt, a very pretty hybrid with Indian yellow flowers derived from C. × Fitchianum ♀ and C. insigne ♂.

W. Vanner, Esq., Camden Wood, Chiselhurst (gr. Mr. Robbins), showed Cypripedium × Vanneræ, a very pretty hybrid derived from C. Curtisii and C. × selligerum majus.

W. C. Walker, Esq., Winchmore Hill (gr. Mr. Cragg), sent a fine form of Cymbidium eburneum.

Messrs. James Veitch and Sons, Chelsea, exhibited a fine group of hybrids, to which a Silver Floral Medal was given. The handsome

Dendrobium × Cordelia, which was fully described at page 172 of our last volume, further received an Award of Merit. The group also included five fine plants of Cymbidium × eburneo-Lowianum, the pretty Masdevallia × Asmodia, Odontoglossum × excellens artificially raised, O. × Wilckeanum, Selenipedium × macrochilum, Dendrobium × Cybele nobilius, and D. × murrhiniacum (D. nobile × Wardianum).

Messrs. F. Sander & Co., St. Albans, also received a Silver Flora Medal for a very fine group. Two of the plants also received special awards. These were the beautiful Bollea Schrœderiana, a fine plant, bearing nine large and fragrant white flowers with light rose-pink lip, which received a First-class Certificate, and the singular Batemannia peruviana (Rolfe), to which a Botanical Certificate was given. The group also contained a very fine Cypripedium Lawrenceanum Hyeanum, Pescatorea Lehmanni, Eulophiella Elisabethæ, Dendrobium × Rolfeæ, D. nobile Amesiæ, D. n. Cooksoni, D. Findlayanum, Masdevallia Schlimii and M. × Measuresiana, some fine Odontoglossums, Cattleyas, Lycastes, &c.

Mr. James Cypher, Cheltenham, staged a group of splendidly grown and flowered Dendrobiums, including D. crassinode Barberianum, D. Wardianum, and several varieties of D. nobile, D. × Ainsworthii, &c., the group receiving a Silver Banksian Medal.

Messrs. W. L. Lewis & Co., Southgate, also exhibited a fine group, which received a Silver Banksian Medal. It contained some good forms of Cattleya Trianæ, Dendrobiums, Odontoglossums, Cymbidium Lowianum, Cypripedium × cilio-villosum, a pan of the pretty yellow Dendrobium capillipes, &c.

Messrs. Hugh Low & Co., Clapton, contributed an effective group, containing some fine Dendrobiums and Odontoglossums, Cattleya Trianæ, numerous plants of Miltonia Roezlii, &c., a Silver Banksian Medal being awarded.

Messrs. B. S. Williams and Son, Upper Holloway, also received a Silver Banksian Medal for a large and effective group, including numerous Cypripediums, fine forms of Dendrobium nobile, D. × Leechianum, a large and profusely flowered Cymbidium eburneum, C. Devonianum, some handsome specimens of Vanda tricolor and V. suavis, Odontoglossum blandum, O. gloriosum, O. × Andersonianum and Angræcum modestum.

At the meeting held on April 9th there was also a very good display of Orchids, including some well-grown specimens, especially a magnificent example of Cattleya Lawrenceana shown by Sir Trevor Lawrence. A plant of the rare little Catasetum scurra from Lord Rothschild's collection was also very interesting.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), exhibited a splendid specimen of Cattleya Lawrenceana, about 3

feet across, and bearing 58 flowers, the largest spike having 11 flowers. A Silver Flora Medal was awarded to this plant. He also exhibited Eulophiella Elisabethæ, the beautiful Miltonia × Bleuana nobilior (see frontispiece of our last volume), Odontoglossum × aspersum violaceum, the pretty Epidendrum Endresio-Wallisii, and Masdevallia leontoglossa.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), sent Cattleya Lawrenceana and its two pretty varieties, C. L. concolor, with flowers uniformly soft rose, and C. L. Vinckei, with lavender-coloured sepals and petals and dull slaty purple lip; a very fine Odontoglossum × Ruckerianum, and a very handsome plant of Dendrobium × Cybele.

The Rt. Hon. Lord Rothschild, Tring Park (gr. Mr. Hill), showed a fine form of Cattleya amethystoglossa, Dendrobium tetragonum, the rare and pretty little Catasetum scurra, with racemes of fragrant whitish flowers lined with green, and a Lælia called L. flava aurantiaca, to which an Award of Merit was given. The curious little Bulbophyllum nigripetalum also received a Botanical Certificate.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous), staged a pretty group, to which a Silver Banksian Medal was given. It contained several good plants of Miltonia Roezlii, Vanda suavis, Cattleya Trianæ, and Angræcum sesquipedale, a good Odontoglossum Cervantesii roseum, O. nebulosum candidulum, and other fine Odontoglossums, Lælia harpophylla, Cattleya Schrœderæ, Angræcum Sanderianum, &c.

De Barri Crawshay, Esq., Rosefield, Sevenoaks, sent a fine form of Odontoglossum gloriosum, and the very handsome Odontoglossum triumphans Lionel Crawshay, to which a First-class Certificate was given. It had previously received an Award of Merit.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Safford), showed a fine Odontoglossum polyxanthum, and O. crispum Catherine, a beautifully spotted form, to which an Award of Merit was given.

G. C. Raphael, Esq., sent a splendid spike of Eulophiella Elisabethæ, with about forty flowers and buds, a Cultural Commendation being awarded.

Mr. F. W. Moore, Glasnevin Botanic Garden, sent spikes of Cœlogyne lactea, Cattleya Schrœderæ, Cymbidium Devonianum, and Masdevallia ludibunda, a Botanical Certificate being given to the latter.

Major-General E. S. Berkeley, Spetchley, Bitterne Park, Southampton, sent the very pretty Dendrobium × Rolfeæ roseum, figured at page 113 of our last volume.

A. H. Smee, Esq., The Grange, Carshalton (gr. Mr. Cummins), showed a fine plant of Cymbidium Lowianum concolor, characterised by having lost the red blotch on the lip.

T. Statter, Esq., Stand Hall, Whitefield, Manchester, sent the beautiful Lælio-cattleya × Pallas, and fine forms of Cypripedium × selligerum, Cattleya Schrœderæ, and C. Mendelii.

Messrs. James Veitch & Sons, Chelsea, received a Silver Banksian Medal for a fine group, including the beautiful Lælia × Latona, Cypripedium × Winnianum, C. × obscurum, Selenipedium × macrochilum, the Luxembourg variety of S. caudatum, Miltonia Roezlii alba, Dendrobium Farmeri, D. × Alcippe, Odontoglossum × Wilckeanum, and other Odontoglossums, two very fine forms of Cattleya Schrœderæ, &c.

Messrs. F. Sander & Co., St. Albans, staged a very fine group, to which a Silver Banksian Medal was given. It included Bollea Schrœderiana, the old but seldom seen Cyrtopera Woodfordii, Dendrobium veratrifolium, D. dixanthum, D. Brymerianum, D. Phalænopsis, the rare D. amboinense, Spathoglottis plicata, Eulophiella Elisabethæ, Oncidium varicosum Rogersii, several fine Odontoglossums, forms of Lycaste Skinneri, &c.

Messrs. W. L. Lewis & Co., Southgate, also received a Silver Banksian Medal for a good group, containing a good Trichopilia suavis, Cirrhopetalum picturatum, Cattleya Mendelii, C. Mossiæ, Odontoglossum crispum, O. luteopurpureum, the pretty little O. Œrstedii, O × Andersonianum, O. læve, O. cordatum, &c.

Messrs. W. and G. Drover, Farnham, showed two forms of Cattleya Trianæ.

CORRESPONDENCE, &c.

W. A. G., Manchester. The beetle sent is the Dendrobium beetle or "shot-borer" Xyleborus perforans). Unless the plant is too badly affected, it would be sufficient to cut off and burn the affected parts, keeping a watch for and destroying any stray insects.

S. & W., New York. Dendrobium secundum.

H. C. The "graphic" formula for representing hybrids, we believe, was originally worked out by Mr. Rolfe in a paper on "Bigeneric Orchid Hybrids" (*Journ. Linn. Soc.*, xxiv., p. 156), which appeared in 1887, where it is used to show the species which had been crossed with Cypripedium barbatum (p. 162).

Photographs received, with thanks; W. S. E., Dorking; A. W. H., California.

O. O. W., Bury. Many thanks; next month.

S. G. L., Beckenham. Odontoglossum × Caphicanthum immaculatum; really an unspotted form of O. × Andersonianum, with yellow ground suffused with rosy purple.

Alpha. Both Dendrobium thyrsiflorum, the pure white one typical. Cattleya velutina, a good average flower. C. alutacea is synonymous. The flowers are always fragrant. C. Schrœderæ, a fine form. We do not identify the two forms of C. Trianæ with any of the named varieties. Very glad the article is so much appreciated.

We have received the Catalogue of Orchids of Messrs. Charlesworth & Co., of Heaton Bradford, for 1895, containing an excellent selection of Orchids. A novel and useful feature introduced into this Catalogue is a list of the hybrids raised in the different genera, together with their parents. We note with satisfaction that Cypripedium and Selenipedium are enumerated separately, but it would have been better to have followed the same course with Cattleya, Lælia, Lælio-cattleya, and Sophro-cattleya, instead of amalgamating them in one alphabetical list.

ERRATUM.

Page 119, line 14 from bottom, for "Labaun" read "Labuan."

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

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NOTES.

Two meetings of the Royal Horticultural Society will be held during June —on the 11th and 25th respectively—when the Orchid Committee will meet at the usual hour of 12 o'clock noon.

On the former occasion a Silver-gilt Flora Medal or a prize of one guinea is offered for the best seedling Orchid not exhibited previous to January 1st, 1895. The competition is open to all.

Very little progress has yet been made in the raising of seedling Odontoglossums, though two or three successful cases are on record. We are glad to learn that M. Ch. Vuylsteke, of Loochristy, Gand, has a batch of twenty plants, obtained from O. Insleayi ♀ and O. crispum ♂, and a single one from O. crispum ♀ and O. Harryanum ♂, both very interesting crosses. M. Vuylsteke has tried sowing them here and there in his houses in all possible ways for a long time without result, and those now produced were obtained by sowing the seed broadcast and quite carelessly.

A fine flower of Cypripedium Chamberlainianum has been sent by W. Vanner, Esq., of Camden Wood, Chislehurst, with the information that it is one of four on the raceme all expanded at the same time, which is certainly unusual, and we do not remember to have seen it recorded before. It probably indicates strength on the part of the plant, and good culture in any case. The imported plants were necessarily weak for a considerable time, but have now had time to become established and vigorous, so that the true character of the species can show itself.

A very pretty variety of Cattleya Schrœderæ comes from the same

collection in which the flowers are blush-pink throughout, the characteristic orange blotch being obliterated. The disc is slightly suffused with very pale yellow, and in front of it there is a faint zone of deeper pink. But the colour is so nearly uniform throughout that it may be called C. Schrœderæ concolor. The flower is of good size and perfect shape, and altogether the variety is very distinct and attractive.

A fine flower of Cypripedium × orphanum comes from O. O. Wrigley, Esq., of Bury, who remarks that, although a plant of doubtful origin, he thinks the parentage is clearly shown in the flower. The general shape is near that of C. barbatum, and the dark stripe of the dorsal sepal and petals shows the influence of C. Druryi, while the colour of both parents can be distinctly traced. This is quite correct, and we think that the origin of this pretty hybrid is no longer a matter of uncertainty.

A very fine flower of the beautiful Dendrobium × Venus comes from Mr. James Cypher, Cheltenham, the petals being over $2\frac{1}{2}$ inches long, and the other parts proportionately developed. There are thirty flowers on the plant, and the best pseudobulb is four feet long. It affords evidence of good culture, as the stock of this hybrid has been raised by propagation from the original batch. It is a seedling from D. Falconeri, crossed with D. nobile, and most resembles the latter in habit and the former in the flower, except that the characteristic yellow blotch of the mother plant is wanting. It is one of the finest hybrid Dendrobiums known.

A fine form of Cattleya Mendelii, called Uplands variety, from the collection of C. Winn, Esq., The Uplands, Selly Hill, Birmingham, has a broad purple band along the middle of the lip, near the apex. The ground-colour is very pale blush-pink, with the front half of the lip bright ruby-crimson. It is a very handsome form.

Cypripedium Haynaldianum superbum comes from the same collection. It is large and brightly coloured, but its chief peculiarity is that the nerves on the sides of the dorsal sepal are purple, and the spots extend to rather above the middle. Those on the petals are large, and very deeply coloured.

Mr. James Cypher, Cheltenham, sends flowers of Dendrobium Hildebrandii and its pretty variety oculatum, the latter differing in the possession of a pair of maroon eye-like spots at the base of the lip. This variety seems rare, but was originally collected with the typical form. The species was figured at page 49.

Mr. H. T. Clinkaberry, gardener to C. G. Roebling, Esq., Trenton, New

Jersey, writes to say that a beautiful spike of Eulophiella Elisabethæ has appeared in the collection under his charge, with twenty-eight open flowers, but that all we have said respecting it is correct.

The *Journal des Orchidées* again reverts to our remarks on Eulophiella as a quibble about a microscopic difference. It has been shown that the difference between the *Lindenia* plate and the actual flowers is little short of 33 per cent, which hardly requires the aid of a microscope to see. If figures of Orchids are to be of any use to those who have occasion to consult them, it is important that they should be as accurate as possible, and this alone caused our remarks. The example chosen is not by any means an isolated one.

We learn that the second edition of Mr. H. A. Burberry's *Amateur Orchid Cultivator's Guide Book* is in course of preparation, and will be issued some time next month. It has been revised throughout, and several new features introduced which will increase its usefulness. We shall have occasion to notice it in a future number.

LÆLIA GRANDIFLORA.

An exceptionally fine flower of Lælia grandiflora, or L. majalis, to quote its later and better-known name, is sent by E. H. Woodall, Esq., St. Nicholas House, Scarborough, who remarks that if the extreme simplicity of its culture were realised it would be much sought after. The plant has been for years hung close to the glass in a Muscat Vinery, where it is very dry and cool in winter, and warm from the middle of March until the Muscats ripen. The flower sent affords evidence of the success of the treatment. It measures $6\frac{5}{8}$ inches from tip to tip of the petals, these organs being $2\frac{1}{8}$ inches broad, and the front lobe of the lip $1\frac{7}{8}$ inches broad. Sometimes the scapes are two-flowered.

The nomenclature of this beautiful species has been so much confused that it seems desirable to point out how completely the original name has been lost sight of. When, in 1831, Lindley founded the genus Lælia (*Gen. and Sp. Orch.*, p. 115), two species only were known to him, namely Bletia grandiflora and B. autumnalis (*Llav. et Lex. Nov. Gen. Descr.*, Orch. Opusc., pp. 17 and 19), and in each case the original specific names were conserved in the new genus. The former, however, was evidently unknown to Lindley, for on the very next page (116) he again described it under the name of Cattleya Grahami, from a Mexican specimen collected by Graham. In 1839 he again described it as Lælia majalis (*Lindl. Bot. Reg.*, XXV., *Misc.*, p. 35), from specimens sent to the Horticultural Society by Hartweg, who found it on the mountains near Leon, at 8000 feet elevation, where it occasionally freezes in winter. It is said to be the *Flor*

de Mayo, or May flower of the Mexicans. The species was discovered very early in the present century by Humboldt and Bonpland, and was described by Kunth, in 1815, as Bletia speciosa (*Nov. Gen. et Sp.*, I., p. 342), but it is said to have been mentioned by Hernandez as long ago as 1615, in a work on the Natural History of New Spain. It is widely distributed in Southern Mexico, growing on oaks at a considerable altitude, especially in places where the wind is constantly blowing, and where there is a wide range of variation between the temperature of the summer and winter seasons. We hope to see it become more common in cultivation.

LÆLIO-CATTLEYA × ALBANENSIS.

Two years ago this interesting and beautiful natural hybrid was described (*Orchid Review*, I., p. 339), from plants introduced from Bahia by Messrs. F. Sander & Co., of St. Albans, and now we have a curious confirmation of the parentage I had assigned to it. According to the *Lindenia* (t. 466), Lælia grandis was crossed with the pollen of Cattleya Warneri, in the establishment L'Horticulture Internationale, Brussels, and the hybrid flowered for the first time in 1894, being now figured under the name Lælio-cattleya × Varjenevskyana. Whatever the origin of the plant figured, it is certainly identical with L.-c. × albanensis, and bears the same unmistakeable evidence of its descent from the above-named species, with which it grows in a wild state. It is rather curious that the natural hybrid between Cattleya Warneri and Lælia tenebrosa also appeared a few years ago, and now bears the name of Lælio-cattleya × Gottoiana (Rolfe, in *Orchid Review*, I., p. 338), and this is still larger and more deeply coloured than L.-c. × albanensis.

R. A. R.

DENDROBIUM FIMBRIATUM SUPERBUM.

This very fine Dendrobium was exhibited at the Royal Horticultural Society's meeting on April 23rd, by G. Marshall, Esq., Claremont House, Grimsby (gr. Mr. Johnson), and received an Award of Merit. It is an exceptionally fine and richly-coloured form, the flower measuring $2\frac{1}{2}$ inches across the petals, which organs are over eleven lines broad, and, like the sepals, of a rich orange-yellow. The lip is $1\frac{1}{4}$ inches broad, and deep yellow in colour, without any trace of the usual dark blotch. Near the base of the raceme was a curious example of two flowers fused in one. The pedicel was flattened and twice as thick as usual, and at the top were five sepals, three petals, and two lips placed side by side. The two columns were fused in one, which bore two anthers at the top. Mr. Johnson, Mr. Marshall's gardener, writes that the plant has stems five feet long, which flowered most profusely about Christmas last, and has given occasional spikes since.

DIES ORCHIDIANÆ.

THE great Temple Show has been the event of the month, and I am glad to be able to congratulate the Royal Horticultural Society and its officials on having again achieved an undoubted success. For nearly a fortnight prior to the great event the weather had been cold and dull, and on the first day of the show the light was none too good in the tents, but afterwards it brightened, and, as Jupiter Pluvius kindly withheld the watering pot, a large attendance of the public was secured. The Orchids are always one of the principal features of the Temple Show, and this year they were quite as numerous as ever, and for the most part excellent in quality, though I did not see quite as much in the way of novelty as on some former occasions. The old evil of overcrowding was, I think, less pronounced than usual, but still not altogether absent, and there is still room for improvement.

One thing which especially strikes me is the desirability of devising some better means of indicating the limits of the different groups. In a few cases I found it almost impossible to ascertain to whom certain plants belonged, and from the number of inquiries made by visitors it was evident that others found the same difficulty. Indeed, there are one or two plants which the gardening papers do not agree about, a thing which also occasionally happens at ordinary meetings. One does not expect too much from the daily papers on such matters, but I have two cuttings about Sir Trevor Lawrence's Cypripedium Stonei platytænium which may interest the curious. One states that "Baron Schröder exhibited the sensation of the Show . . . one of the only fine plants in this country of Cypripedium Stonei platyplanium . . . now said to be worth a thousand guineas." The other, which is more fortunate about the ownership, describes it as "of almost priceless value, because it has longer whiskers and more pronounced markings than the ordinary kind." I am not sure whether the blunder about the ownership of this plant can be traced to the imperfect system pointed out, but whether or no a remedy for the defect might very easily be found. Perhaps the exhibitors themselves might do more to indicate the limits of their groups.

There is another matter which I am rather perplexed about. The *Gardeners' Chronicle* report states that this very plant received a Silver Flora Medal as well as a First-class Certificate, but on consulting the Society's Official Prize List I find no mention of the first-named award. The same report states that Sir Trevor Lawrence also received a Silver Flora Medal for Epidendrum Stamfordianum, "for continued good culture," but here again the Official List is silent. I suppose that by some accident they were omitted from the latter, especially as no mention is made of Cultural

Commendations to Lælio-cattleya × Hippolyta and Epidendrum Wallisii, which were certainly made, as indicated by cards affixed to the plants.

I was very pleased to see these examples of good culture thus recognised, and hope that in future more of such specimens will be forthcoming. Nothing affords such a test of the cultivator's skill as a large and well-flowered specimen which has taken several years of good culture to perfect, such as the plant of Epidendrum Stamfordianum just mentioned, perhaps the best example in the show. The specimen of Masdevallia Benedicti exhibited by Baron Schröder, bearing three hundred flowers, was also very remarkable, as well as the Epidendrum Wallisii shown by J. Gurney Fowler, Esq., and Lælio-cattleya × Hippolyta, with an eight-flowered spike, of M. Jules Hye. Messrs. Sander's plant of Oncidium altissimum was also very remarkable, but has the appearance of being a large imported clump.

Two plants of the beautiful albino Cypripedium Lawrenceanum Hyeanum were exhibited, being subdivisions of the original plant, and it is curious to note that the one in Baron Schröder's collection is not absolutely identical. The latter has narrower petals, with a row of light reddish warts along the margins, while the green is of a somewhat darker shade. Their presence at the Temple Show furnished a good opportunity of comparing them together, and to my mind the original lighter form is the more beautiful of the two. It is quite evident that they have arisen independently, and I hear of a third albino which is again different, which is rather interesting, especially when one remembers that the albino of the old C. barbatum has not yet appeared.

ARGUS.

THE HYBRIDIST.

DENDROBIUM × MURRAYI.

THIS is a very distinct and pretty hybrid raised in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, from Dendrobium nobile ♀ and D. albosanguineum ♂, of which flowers have now been sent. The flower is most like an enlarged D. nobile, the petals being $2\frac{1}{8}$ inches long by $\frac{7}{8}$-inch broad, and the lip of proportionate dimensions. The sepals and petals are palest blush white, and the lip, which has the general shape of D. nobile, has a large light maroon disc, and a white apex, the margin being suffused with light purple. It is a large and handsome form, and a very promising addition to the group. It is dedicated to Mr. Murray, Mr. Cookson's able gardener, to whom we are indebted for so many acquisitions among hybrid Orchids.

DENDROBIUM × ASTRÆA.

Another addition to the list of hybrid Dendrobiums has also to be recorded from the same collection, and this was derived from D. luteolum ♀ and D. crassinode ♂. The flower is cream-coloured, with all the segments tipped with rose-purple, the disc of the lip being deeper yellow, hairy, and with several radiating crimson lines. The sepals and petals are 1½ inches long. In general shape the flower is most like the seed parent, including the shape of the spur and the hairy crest, but the influence of D. crassinode is seen in the coloured tips of the segments, as well as in other characters. Judging by the flowers received it will develop into a very pretty thing as the plant becomes stronger.

CIRRHOPETALUM GAMOSEPALUM.

A plant of this rare little species was exhibited at the meeting of the Royal Horticultural Society on April 23rd last, by the Right Hon. Lord Rothschild, and received a Botanical Certificate. As, however, it was labelled "C. Cumingii," it is advisable to point out briefly how the two plants differ. C. Cumingii Lindl. is a native of the Philippine Islands, and is one of the many varieties introduced by the collector whose name it bears. The flowers are of a distinct shade of light rosy purple, the lateral sepals linear-oblong, and the hairs which adorn the margins of the dorsal sepal and petals distinctly thickened or clavate at the tips. It is figured at t. 4996 of the *Botanical Magazine*. C. gamosepalum, Griff., is a native of Burma, and has the lateral sepals broader and more distinctly obovate-oblong, the hairs of the dorsal sepal and petals are not at all clavate, and the tips of the lateral sepals are whitish, while behind this the colour can best be described as marbled with reddish purple on a lighter ground. Both are very rare in cultivation, and when compared side by side the difference is very obvious.

R. A. R.

ODONTOGLOSSUM × ANDERSONIANUM MARSHALLII.

This is a very pretty variety of the well-known Odontoglossum × Andersonianum which was exhibited by G. Marshall, Esq., Claremont House, Grimsby, at the meeting of the Royal Horticultural Society held on April 23rd last. It was typical in shape and the segments of medium breadth, but about the centre of the sepals and petals was a roundish group of small purple or almost violet-purple spots, which gave a very pleasing effect on the clear white ground. Several similar spots also occur on the front of the lip. It is a very pretty variety, and in the distinctive colour of the spots quite unlike anything we have seen before.

HYBRID DENDROBIUMS FROM OAKWOOD.

On several occasions we have alluded to the hybrids raised in the collection of Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, and now we have received a series of beautiful Dendrobiums, all raised in the collection, respecting which the following notes will be read with interest. First, we may mention the superb hybrid D. × Venus, raised from D. Falconeri ♀ and D. nobile ♂, to which the Royal Horticultural Society have awarded a First-class Certificate. It flowered for the first time in 1890, and is now represented in numerous collections. D. × Bryan and D. × Sibyl have also received similar awards. The former was derived from D. luteolum ♀ and D. Wardianum ♂, and has primrose-yellow flowers, much like the former, but the disc orange-yellow lined with crimson. The latter is said to have been raised from D. bigibbum ♀ and D. Linawianum ♂. It is a richly-coloured form, with the segments much like a broad deeply-coloured D. nobile, and the disc of the lip white with a pair of rose-pink spots, almost as in D. Linawianum. There is no perceptible trace of D. bigibbum about the flower. D. × Doris is the very pretty hybrid described at page 142 of our last volume. It was derived from D. × Leechianum ♀ and D. moniliforme ♂, and has white flowers with a light greenish-yellow disc. D. × Vannerianum was originally raised in the collection of W. Vanner, Esq., from D. moniliforme and D. Falconeri, the former believed to be the seed parent. One called D. × V. Oakwood variety, presumably from the same parentage, has flowers much like D. moniliforme in size and shape, but the pedicels rose-coloured, the segments tipped with the same, and a bright crimson spot on the disc of the lip. A pretty light form of D. × Leechianum and a hybrid from D. nobile ♀ and D. × Ainsworthii ♂ are also included, the latter a light pink flower with much smaller lip than D. × Apollo, derived from the same parents.

A series of flowers derived from D. nobile nobilius crossed with the pollen of D. n. Cooksoni are very remarkable. From the same seed-pod were derived some good forms of each parent, and a series of varieties grading down to ordinary D. nobile, a result which is interesting, to say the very least. F. H. Moore, Esq., Royal Infirmary, Liverpool, also sends a flower reputed to be from the same parentage, which can only be considered as an ordinary form of D. nobile.

Two new crosses derived from D. luteolum × crassinode and D. nobile × albosanguineum are also enclosed, but these are described in our article "The Hybridist" on another page. They are very interesting additions to the series raised at Oakwood, which reflect great credit on Mr. Cookson and his able gardener, Mr. W. Murray.

ORCHIDS OF THE SHAN STATES.

By R. MOORE, E. A. Commr., Burma, late Officiating Asst. Supt., S. Shan States.

THE Shan States lie to the east of Upper Burma proper, between Burma on the west, and Siam and China to the north and north-east. A glance at the latest map of India will show a very large tract of country marked as very mountainous, and it is here that the petty Shan chiefs still rule, under the guidance of the Superintendents of the Northern and Southern Shan States and their assistants, as representing the Local Government of Burma.

The Southern Shan States can be approached from the province of Tenasserim, through the Moulmein and Taungū districts, both for many years the hunting grounds of Orchid collectors; but this approach is a very difficult one, over steep mountain passes, and not even yet quite safe for Europeans travelling without armed escorts. The best way to get to Fort Stedman or to Taunggyi is to travel by train from Rangoon, through Taungū, to the Meiktila Road Station, well on the way to Mandalay, from whence there is a good bullock-cart road right through, a distance of about 110 miles, though much less as the crow flies. In December and January the journey is a pleasant one, and some really magnificent mountain scenery is met with after the terai or low malarious belt is passed. Many interesting details of the journey could be given did space permit; suffice it to say that after some stiff climbing one reaches a delightfully cool climate, the air blowing over the open downs, and, in the early morning, almost as bracing as that of a Yorkshire moor.

There are Orchids of sorts to be met with all the way up to Fort Stedman, the smaller species of Bulbophyllum and Cirrhopetalum creeping along the trunks and branches of trees, and on the rocks along the road. Every now and again, high up the trees, out of reach from the road, a plant of Vanda cœrulea and many of the commoner Dendrobiums will be seen; but it is not along the road that a collection can be made.

Fort Stedman is built on the eastern shore of Lake Inle (pronounced In-lay), and it is within thirty to fifty miles of this lake, north and south, east and west, where most of the Orchids mentioned below are to be found in plenty, and where all but two or three are found.

The climate is temperate, the height above sea-level from 4,000 to 5,000 feet, and the thermometer ranges from 80° Fahr. in the summer months to a few degrees below freezing-point in the winter. The annual rain-fall is from 40 to 60 inches, distributed principally in the months from May to November, but showers may also be expected from January to April. The frosts do not penetrate below the surface, and are frequent between the middle of December and beginning of March. There are heavy dews in the winter months, December especially.

Most of the Dendrobiums mentioned below are met with in the deep valleys and on the slopes of the hills. Dendrobium crassinode is found at the very top of the highest trees, and it is often a very dangerous task attempting to get at them. Saccolabium bellinum is found on trees in deep shade, with water below, and a constant moist atmosphere. I have seen it under these conditions over 5,000 feet above the sea-level. I have also seen Vanda cœrulea of a very dark type, on trees overhanging a stream, at the same elevation, but not in deep shade. Vanda Kimballiana grows mostly on rocks, and in clusters, which break up into single plants on being pulled off. Like V. Amesiana, it likes the sun, and I have seen both species clinging to bare rocks in the full blaze, without any shade. Of Vanda Bensoni there are many varieties, and these have the same habit as V. cœrulea. I believe Vanda Vipanii is also to be found here. There are oak woods on the road from Fort Stedman to Taunggyi, but I have never seen Vanda cœrulea growing on the trees there. Vanda Parishii is found near the Salween River, and the variety Marriottiana is fairly plentiful east of Lake Inle.

Cypripedium bellatulum is very generally distributed in the area described above. It grows on low hills, in loam, among the under-growth, or on rocks to some extent directly exposed to the sun. Cypripedium Parishii grows in big clusters in the forks of trees, on the middle and lower branches, fairly shaded. It also grows freely on rocks, under the same conditions as C. bellatulum, but not on low hills in loam.

Cypripedium Charlesworthii was discovered by me at a place some twenty-five miles south-west of Lake Inle, high up on a limestone hill, fully 5,000 feet above sea-level; and very recently it has been gathered in quite an opposite direction, forty miles north-east of the Lake, or some sixty miles from the place in which it was originally found. It appears to make its home on hills of a certain formation only. In a break in a range of hills there are isolated peaks, high and precipitous, inaccessible to Europeans, and it is here that it grows. I have been out with Shans, and on arriving at a particular place they, by looking at the hill, will tell you whether C. Charlesworthii will be found there or not. If it occurs at all it will be in large quantities, and not a plant will be found on neighbouring hills of different shape or formation. It grows fairly high up on the west and north-west slopes only, never near the base or to the east, south or south-west. The roots cling to the rocks with extraordinary tenacity, and the bigger plants could only be gathered by cutting through the roots with a dah, or Burmese knife. As a rule there is plenty of under-growth around, but I have seen plants growing in the crevices of the bare rock. It grows at a higher level than C. bellatulum, but on one occasion I think I saw C. Charlesworthii and C. bellatulum growing together. I have also seen Dendrobium Dalhousieanum and other Dendrobiums with a piece of C.

bellatulum attached to the roots, and the same thing with C. Charlesworthii.

The places where C. Charlesworthii grows are, as a rule, far removed from villages; indeed, the whole country is very sparsely populated. It is the home of the tiger, the bear, wild boar, leopard (cheetah), and of huge snakes; and, in consequence, the collecting of the plant is attended with a good deal of danger. The Shans will only go out in parties of about ten, and they take with them gongs, which are beaten to scare away the wild beasts. When I first collected it in quantity I had thousands of flowers, and some of them were of great size. I little dreamt at the time that it would be found so widely distributed, and I did not then know that it was a new Orchid. It flowered in England at the same season as it does in Burma.

Dendrobium Hildebrandii was first discovered by Mr. Hildebrand, Superintendent of the S. Shan States, and some plants were sent to Messrs. Hugh Low & Co. Afterwards, my men came across it, and, without knowing what it was, I sent some to Messrs. Charlesworth, who identified it, and sold the plants. Its habitat is on the border of Siam, a good way east of the Salween River, and some 300 miles east of Lake Inle. D. velutinum was found by my men on their return about the same time. It is found both east and west of the Salween River, and much nearer to Fort Stedman than D. Hildebrandii.

Cynibidium Lowianum grows about 20 miles east of Fort Stedman, but not plentifully, and there are quite a number of pretty little Orchids of botanical interest, some of which I am trying to flower in England.

The following is a rough list of Orchids which I remember to have met with within a circumference of, say, 30 miles of Lake Inle, which may, perhaps, be of interest:—

Dendrobium aggregatum, D. albosanguineum, D. aureum, D. Cambridgeanum, D. cariniferum, D. chrysanthum, D. chrysotoxum, D. crassinode, D. crepidatum, D. crystallinum, D. Dalhousieanum, D. Falconeri, D. fimbriatum (type), D. Findlayanum, D. Jamesianum, D. sarmentosum (a new species, recently named at Kew), D. suavissimum, and D. thrysiflorum.

Cirrhopetalum picturatum, and others.

Cymbidium Lowianum.

Rhynchostylis retusa.

Aërides odoratum and A. Vandarum.

Vanda Amesiana, V. Bensoni, V. cœrulea, V. Kimballiana, V. Parishii Marriottiana, and V. teres.

Saccolabium bellinum and S. giganteum.

Cypripedium bellatulum, C. Charlesworthii, and C. Parishii.

There are also species of the above and other genera whose names I do not know, and numerous species of botanical interest, including various terrestrial kinds.

Near the Salween River, Vanda Parishii typical is found.

East of the Salween River occurs Dendrobium fimbriatum oculatum, D. Hildebrandii, D. nobile, and D. velutinum.

Dendrobium Cœlogyne and D. senile are found, perhaps 100 miles south of Lake Inle, in the direction of the Moulmein district.

CATTLEYA CITRINA AURANTIACA.

We have received a magnificent two-flowered raceme of this fine variety of Cattleya citrina from R. Brooman White, Esq., of Arddarroch, the lip of one flower measuring $3\frac{1}{8}$ inches long, and the petals $1\frac{5}{8}$ inches broad. Mr. G. Roberts, Mr. White's gardener, states that it grows very well in pans in the Intermediate house. We think we have never seen it equalled, certainly not surpassed. The history of this fine variety was given at page 194 of our last volume, so we need only say here that it differs from the type in having distinctly spreading sepals and petals, and the front lobe of the lip more elongated and deeper in colour. We learn also that the C. citrina for which H. Grinling, Esq., received a First-class Certificate on April 23rd, was this variety. The *Journal of Horticulture*, in its report of the meeting, suggested that it was deserving of a varietal name, but this, it will be seen, has already been given. Some growers find a difficulty in growing this species for long together, but R. Baillie Macbean, Esq., St. Mary's Gate, Lancaster, in a note received, states that he finds the bulbs increase in size yearly, even after four years growth, a bulb measured proving 3 inches long by $5\frac{1}{4}$ inches in circumference. He grows the plant on pieces of tree-fern stem, with little or no moss or peat, and finds that it both grows and flowers well. The flowers are powerfully fragrant.

ODONTOGLOSSUMS NEAR GLASGOW.

Odontoglossums are very well grown in the collection of Hugh Steven, Esq., Westmount, Kelvinside, near Glasgow, from whom we have received a fine raceme of O. × Andersonianum, and several good forms of O. crispum, O. Hallii, and O. luteopurpureum. About two hundred spikes of various kinds are showing, and will soon be in full flower. Mr. David Wilson, the gardener, states that they are great favourites of Mr. Steven, and that they find them the best plants for growing in the vicinity of a smoky city, in which respect Glasgow comes second to none in the kingdom. Some good examples of the ever popular Dendrobium nobile and D. Wardianum are also enclosed, affording equal evidence of good culture.

DENDROBIUM PULCHELLUM AND D. LODDIGESII.

A splendid plant of the charming little Dendrobium Loddigesii, or what is often incorrectly called D. pulchellum, has just flowered in the establishment of Mr. James Cypher, of Cheltenham. It is growing in an eight-inch pan, and produced about three hundred blooms, forming a most lovely sight. It is a dwarf species, with creeping habit, and was introduced to cultivation by Messrs. Loddiges, of Hackney, prior to 1833. In that year it was figured in *Loddiges' Botanical Cabinet* (t. 1935) as D. pulchellum, India being given as the native country. The Indian D. pulchellum, however, is a very different plant, about which for a long time practically nothing was known beyond the original description, and the name became transferred to a totally different plant. The confusion has since been pointed out, and it may be of interest to repeat the matter, as the name D. pulchellum is still often applied to the wrong plant.

D. pulchellum was originally named by Roxburgh, but the description did not appear until 1830 (*Lindl. Gen. and Sp. Orch.*, p. 82). It is a tall species, about three feet high, bearing long racemes of large nankeen yellow flowers with a concave lip, on which are a pair of dark maroon eye-like spots. In fact it is none other than the well-known D. Dalhousieanum (*Paxt. Mag. of Bot.*, xi., p. 145, with plate), described in 1844, as Roxburgh's drawing shows.

Loddiges commenced the confusion by transferring the name to the dwarf species mentioned above, which is stated to be a native of India. Maund also figured it (*Botanist*, I., t. 5), stating that it was a native of Sylhet. These habitats, however, are probably copied from Lindley, for the species is now known to be a native of China. Lindley next added to the confusion by making the quite distinct D. Devonianum, Paxt., a synonym of D. pulchellum (*Journ. Linn. Soc.* III., p. 12). Reichenbach afterwards made it a distinct variety of D. pulchellum. The three, however, are quite distinct, as has since been pointed out (Rolfe in *Gard. Chron.*, 1887, ii., p. 155), and as Loddiges' plant required a new name it has since been called D. Loddigesii. As long ago as 1858 Sir William Hooker had expressed a doubt as to the identity of Loddiges' D. pulchellum with the original one of Roxburgh, and the matter has now been entirely cleared up. All three species are well known in cultivation, and are among the most attractive in the genus.

D. pulchellum, Roxburgh (D. Dalhousienum, Paxt.), was sent to Chatsworth in 1837 by Gibson, who had obtained it from the Calcutta Botanic Garden, to which establishment it had been presented by Lady Dalhousie. It ranges from Sikkim to Burma. The racemes are produced from the leafless pseudobulbs, sometimes for several years in succession, and a large and well-flowered plant is a most imposing sight. It succeeds well under the same treatment as is given to others from the same region.

D. Loddigesii, Rolfe (D. pulchellum, Lodd.), is a native of the Island of Hainan, and on account of its small size and creeping habit should be grown in a shallow pan and suspended near the glass. It is an elegant little plant when successfully grown.

ONCIDIUM HÆMATOCHILUM.

This beautiful Orchid, which is fast becoming rare, is found in this Island (Trinidad) only in one district, where, strange to say, O. Lanceanum is only found. This district, the extreme south-western point, is called "Cedros," and therefore O. Lanceanum is known locally as "the Cedros bee," all of the Oncidiums being termed "bees" from the fancied resemblance of the flowers to these insects.

In some works on Orchids *O. hæmatochilum* is described as a distinct species, but the writer would be glad to get a decided opinion of some authority on this point, for, to his mind, the appearance of the plant seems to indicate that it is a natural hybrid, whose parents are *O. luridum* and *O. Lanceanum*. And in support of his idea the writer gives the following facts which he can, and has proved beyond any question of a doubt:—(1) In the district where O. hæmatochilum is found, O. Lanceanum and O. luridum are found in quantities, and sometimes growing close to one another, even, in some instances, on each other's roots. (2) These species flower at the same time of the year, the dry season (February to April), although O. Lanceanum flowers twice a year in Trinidad (February to March and September to October). (3) There are two kinds of varieties of O. hæmatochilum. In one the sanguineous blotch in the lip is large and spreading, and the yellow border small, in the other the blotch on the lip is small, and extends only a little below the projections or tubercles at the base of the lip, the greater part of the lip being of a bright yellow. The sepals and petals are the same in both varieties, but the leaves of the yellow-lipped variety are paler than the red-lipped variety. These facts, and the close resemblance of the plant to *Oncidium luridum*, seem to render the doubt as to it being a distinct species justifiable.

The writer has in his possession some fine specimens of both varieties, besides many plants of O. luridum and of O. Lanceanum, and has sown seeds from pods of hybridised flowers. Of these seeds he has succeeded in raising only one seedling, which will not be of any size for one or two years, when he hopes to settle this doubt. Perhaps some reader of the *Orchid Review* might have done so already.

St. Ann's,
Trinidad, B.W.I.

THOMAS T. POTTER.

[This most interesting communication throws a totally new light on the origin of the beautiful Oncidium hæmatochilum, which has always been

rare in Europe, and whose very history has been confused. It was originally described and figured by Dr. Lindley in *Paxton's Flower Garden* (I., p. 21, t. 6) in 1850, where we learn that "the accompanying drawing was made in September, 1847, from a plant in the possession of Messrs. Loddiges, and we believe it is found in their list under the provisional name of O. luridum purpuratum. They had imported it from New Grenada; but it does not occur among any dried collections which we have examined from that country." Lindley remarked that this purple-lipped kind was one of the best, being inferior to none but O. Lanceanum. Afterwards (*Fol. Orch., Oncid.*, p. 41) he observed:—"Intermediate as it were between O. Lanceanum and luridum. Sepals and petals green, mottled with crimson. Lip crimson mottled with white. Pollen-masses and appendages as in O. luridum." In 1882 it was figured in the *Orchid Album* (t. 32), and although both figures are good ones they are remarkably dissimilar, the latter being more like O. luridum in shape, and having the margin of the lip yellow. The former shows a very perceptible approach to O. Lanceanum, both in shape and colour. The habitat has never been confirmed, and Messrs. Veitch (*Man. Orch.*, viii., p. 41) remarked that, although since 1847 it had appeared at intervals in various collections in Great Britain, its habitat was virtually unknown. New Granada may now be dismissed as certainly erroneous. There is, however, another plant which is unquestionably a form of O. hæmatochilum, namely, that called O. luridum var. atratum by Lindley (*Journ. Hort. Soc.*, vi. p. 54, with fig.), which flowered in the Horticultural Society's garden in 1851. It was described as a fine form of 'O. luridum, in some respects like O. hæmatochilum, and had olive-coloured sepals and petals, and a rich crimson lip, furnished at the base with five purple-black tubercles. It was said to have been collected by Hartweg at Tampico, in Mexico, but here again some mistake seems to have been made. It may be described as a form of O. hæmatochilum with the shape of O. luridum, and almost the colour of O. Lanceanum. Looking at these facts in the new light thrown upon the subject by Mr. Potter, we think that the hybrid origin of Oncidium hæmatochilum is demonstrated, and that in future the name must be written with the sign of hybridity, thus O. × hæmatochilum. The cause both of its rarity and variability is now explained, and unless the two species also grow together in Guiana, it is probable that all the few known plants have come from the same district of Trinidad, together with one or the other of the parent species. We are very glad to learn that an experiment has been made to prove the matter, and in view of the rarity and beauty of the plant, we would suggest that further crosses should be made in the hope of raising a good batch of seedlings.—Ed.]

DENDROBIUM SEEDLINGS AT BURY.

In March, 1894, I fertilised one flower of Dendrobium nobile Cooksoni with the pollen of D. n. nobilius, and another flower of Dendrobium × Leechianum (splendidissimum) with the pollen of a very dark variety of Dendrobium Phalænopsis. The capsule of the first cross ripened, and was sown on February 12th, 1895, and that of the second cross on March 6th, 1895. On the 1st of April the seeds from both these capsules were showing evident signs of germination, and the minute seedlings have gone on growing steadily, until yesterday, April 24th, I could perceive signs of the first leaf appearing on many of the seedlings of the first cross, sown February 12th, 1895. I may also say that the seed from these two capsules was sown on about seven Orchid pots containing plants of Dendrobes or Cypripedes, and I believe the seeds on every pot are in a more or less advanced stage of germination. The potting material is, in every case, pure fibrous peat, and nothing else. When the seed is sown, the seed pot is always first dipped in water, to wet the peat, so that the seeds may attach themselves to the peat fibres.

O. O. WRIGLEY.

Bridge Hall,
Bury.

MICROSTYLIS MACROCHILA.

A year ago this very distinct and pretty species appeared as a single specimen in the collection of Sir Trevor Lawrence, Bart., among plants of M. Scottii, from which it was not distinguished until it flowered. It was described at page 82. Several other plants have now appeared, both at Kew and in the establishment of Messrs. F. Sander & Co., if not elsewhere. All have the same origin, and have not been distinguished until they flowered. It is very curious that two species which grow together, and have such remarkably different flowers, should be so much alike in the prettily variegated foliage as not to have been detected when out of flower, and suggests that the resemblance is not accidental, and that in a wild state one or the other species may benefit by the arrangement, or, in other words, that it is what is known as a protective resemblance. On examining a series of specimens we have detected a character in the leaves which may be of specific importance, as it serves to distinguish all the plants which we have been able to examine in flower. In M. macrochila the pretty light brown mottling extends uniformly over the leaf, but in M. Scottii a broad irregular darker band occurs along the midrib. Both are very pretty variegated-leaved plants, and are also very easily grown, but the new one has the further advantage of possessing large and attractive purple flowers, which renders it a decided acquisition.

CYPRIPEDIUM × WILLIAM LLOYD.

THE photograph which we have now the pleasure of reproducing represents the beautiful hybrid above named, which was exhibited by Messrs. Hugh Low & Co., of the Clapton Nursery, at the Royal Horticultural Society's meeting on March 12th last, as recorded at page 128. Its parents are Cypripedium bellatulum ♀ and C. × Swanianum ♂, and we believe it was raised by Mr. Ayling, in the collection of A. J. Hollington. Esq., Forty Hill, Enfield. Our first knowledge of this hybrid dates from December 13th

Fig. 7.—CYPRIPEDIUM × WILLIAM LLOYD.

last, when it was exhibited at a meeting of the Royal Horticultural Society by Mr. P. Weathers, Silverhall Nursery, Isleworth, and received an Award of Merit. Both plants, we believe, were derived from the same source, though they are by no means identical, as a comparison of our figure with the one given in the *Gardeners' Chronicle* last December (p. 757, fig. 97) will show. The present one has shorter and broader petals, and has more of the general character of the seed parent. This fact, however, only illus-

trates once more the variability of hybrids, and especially those of secondary origin, like the present one. The flower, also sent by Messrs. Low, is suffused throughout with light rosy purple, slightly paler at the margin, the dorsal sepal veined with deep crimson purple, the petals densely spotted, and the lip and staminode suffused with the same colour. It is a most brilliantly coloured and beautiful hybrid, and as the plant is at present small, it will doubtless improve with increased strength. Our illustration is about three-fourths natural size.

Immediately after the above had been certificated we received from R. H. Measures, Esq., The Woodlands, Streatham, the flower of a hybrid raised in his collection from C. × Swanianum ♀ and C. bellatulum ♂, and thus the reverse cross of the present one. It also is a very beautiful and richly-coloured form, showing a good deal of the C. bellatulum character. We are inclined to think that when a series of plants can be compared together, it will have to be considered as a form of the present one.

LOW WINTER TEMPERATURES.

I observe in the April number of the *Orchid Review* some interesting records of low temperatures for Orchids, which coincide with some of my experiences last winter. The house which I refer to is situated at the foot of the garden, and is rather damp. On at least eight different occasions the thermometer in or near the centre of the house, at three feet from the roof glass, registered as low as 31° to 33° Fahr. at 8 a.m., the fire having been banked at 10 p.m., with the temperature at 45°. Around the sides of the roof glass for several weeks there was a thickness of ice of from one-half to four inches thick. Almost touching this stood eight plants of Odontoglossum maculatum and O. cordotum, which continued to push up their flower spikes, and still remain in robust health. Bletia hyacinthina seems to enjoy the same situation. A dozen Odontoglossum Rossii were within six inches of the roof glass, and close by were O. Ehrenbergii, Oncidium nubigenum, O. Phalænopsis, and Cochlioda sanguinea, none of which are a bit the worse for their enforced cold quarters on the front stage, standing on a cold ash bottom. About thirty plants of Odontoglossum crispum have nearly all lost their leaves, but Cypripedium insigne along with them enjoys the situation. Odontoglossum ramosissimum, O. cirrhosum, and O. Hallii also stood with O. crispum. Oncidium varicosum Rogersii, O. superbiens and O. macranthum are also doing well, as is Odontoglossum Edwardii. Epidendrum vitellinum is sending up spikes on several plants on the same stage, but raised on stands about a foot high. The plants of Cymbidium Lowianum in twelve-inch pots and a large plant of C. giganteum are growing well in the same house; the former is pushing

spikes, but the latter did not open properly, no doubt owing to the low temperature. Cypripedium × Harrisianum will have an opportunity of showing its likes or dislikes to the lower temperature of this house next year, though I have already grown it for several years among cool Odontoglossums and Masdevallias in another house, and both the specimens grow freely and bloom twice annually. C. Boxallii also does well in this house near the door, and I intend to try C. × œnanthum here instead of in the Cattleya house. Some of the above experiences may be of interest to your readers, though I feel some diffidence in giving them. Personally I think that for the Odontoglossum crispum section not much below 50° in winter, and as little as possible above 65° degrees in summer, would be suitable. O. Lindleyanum, however, seemed happy in the lower temperature.

HUGH J. HUNTER.

Edinburgh.

At page 110 you inserted a little note of my experience with Orchids during the late frost. It may perhaps interest readers to know that Lycaste Skinneri, Dendrobium nobile, and Epidendrum vitellinum majus, though exposed to the same frost, do not appear to be injured. The first two are now in flower, and the latter is showing stronger flower buds than ever before, and I have had it four years. The pseudobulbs of Oncidium macranthum are still quite firm, but the new growth making in February was destroyed.

ANDREW LUSK.

The Dell, Woking.

DENDROBIUM NITIDISSIMUM.

It is interesting to record that the above very remarkable species, which constitutes a distinct section of the genus, has now appeared in cultivation. It was originally collected in the Admiralty Islands, by Mr. Moseley, of the Challenger Expedition, in 1875, and described by Reichenbach (*Journ. Linn. Soc.*, xv., p. 112). Messrs. F. Sander & Co., St. Albans, have now introduced it from New Ireland, another island off the north coast of New Guinea. The plant has somewhat of the habit of a Bulbophyllum, a stout rhizome throwing off growths in succession, which, singularly enough, are of two kinds. The ordinary growth is a narrowly conical pseudobulb from about 1½ to 2½ inches long, bearing a single linear-oblong leaf of about twice the size. But when one of the young growths intends to flower it rapidly elongates into a slender peduncle, about seven to nine inches long, bearing a reduced leaf at the apex, and a spathe three-quarters to an inch long in the axil, something like a Cattleya. Out of this the solitary Sarcochilus-

like flower is produced. This flowering shoot fails to develop a pseudobulb, so that the two kinds of growths are developed one after the other on the rhizome, in allusion to which the name of the section, Diplocaulobium, was given. The flowers, unfortunately, are devoid of beauty, being yellowish, with the narrow sepals and petals passing into light pink, and the whole under an inch long. The front lobe of the lip is yellow, the pubescent disc paler, and the side lobes bordered and spotted with dull purple. D. Mettkeanum, Kränzl. (*Gard. Chron.*, 1894, ii., p. 306), seems to me identical —in fact, it also was imported by Messrs. Sander.

R. A. R.

CALENDAR OF OPERATIONS FOR JUNE.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE general treatment recommended in last month's Calendar should still be maintained, remembering that the temperature and conditions of the atmosphere play a most important part in Orchid culture. If these are properly regulated, and the plants are kept clean, and the compost in good condition, free and healthy growth must inevitably result. Nothing else is necessary, except, perhaps, a little trouble in finding the most suitable positions in the house for any given species it is desirable to cultivate. This is an important matter, for as I have previously intimated, one Orchid will luxuriate here and another there, and thus the various positions in the house, high or low, moist or dry, sunny or shady, may all be made good use of. Position, in fact, is of more real importance than is generally supposed for the successful cultivation and flowering of Orchids, and those who have not had much experience with them should pay particular attention to this important matter.

A shocking instance of mismanagement in this respect has lately come under my notice. At the establishment in question there is a good-sized house partly devoted to their culture, which proves that at some time or other an attempt had been made to grow them, though they are fast losing their possessor's good opinion, owing to improper treatment. I will not attempt to explain here the state into which these unfortunate plants had fallen, suffice it to say that the greater portion greatly needed repotting into much smaller pots, and fresh sweet compost. Nor is it necessary to add how many quite Cool house Orchids were there. Evidently this was the Orchid house, and when one was purchased it was placed in this house, regardless of its requirements. The structure is what is usually known in most gardens as the stove. On being taken into the Orchid House, what, perhaps, struck me as the most comical sight of all was to see such pot plants as Cypripediums carefully suspended, while the really pan or basket-

loving Orchids, such as Dendrobiums and Cattleyas, were in pots standing down upon the stage, and partially hidden by the foliage of larger and coarser stove plants. Mexican Orchids, such as Lælias and others, were also huddled up together, and languishing on the stages far away from the light, where air could not possibly circulate round them freely. Not even were there signs of any attempt to raise them up on inverted flower pots. One or two specimens were doing fairly well, and these had by some means got the position which suited them, but I am inclined to think it was more by accident than design. Taking them altogether they presented a woe-begone and beggarly appearance, the chief cause of which undoubtedly was their being placed in such unsuitable positions. Now, with a very little extra time and intelligence, I do not hesitate to say that the same structure could be made to grow (as it is of good size and has a lofty and spacious roof) most of those which were there, excepting the Cool house kinds, in a much more satisfactory manner than is at present the case. Even in a stove house, one end could usually be made more cool and airy than the other, which should be given to those kinds requiring intermediate temperature, while those requiring more heat should be placed at the opposite end. Those most preferring light and air should be placed near the glass, and all others should be well elevated on the stages, so that they are above the other plants. There should be more suspending bars from which to hang the plants, or shelves should be fixed at suitable places at the ends of the house, or swinging over the paths, so that the light is not excluded too much from the plants below.

I have known some miracles brought about by placing plants on such shelves, and this is what first made me think so highly of them, and afterwards recommend them:—I once had a few Cattleyas of various sorts in very indifferent health, which I fancied gave a bad appearance to the whole of the remaining healthy ones. To get them out of sight was my main object, and a shelf in the same house offered the necessary facilities. On this they were placed, and I was greatly surprised to see how quickly those plants recovered. I believe that when a weakly plant is with the others and continually in sight, that it frequently receives so much kind attention as to hasten its departure, whereas if away on a shelf, and getting only the really necessary attention in watering, and an occasional cleaning, its chances of recovery are greater. I always prefer some such place for any choice and costly specimen, especially during the dull winter months, providing of course they are not *too* near the glass—finding that they then give much less trouble to keep in a permanently healthy condition.

For the intermediate section of Orchids, supposing there be no Mexican house proper, a portion of the roof should be left unshaded, in order to better accommodate such sun-loving species as the Mexican Lælias, Pleiones, Thunias, Schomburgkias, and some of the Epidendrums such as

E. Parkinsoniam, Brassavolas, Oncidum Londesboroughianum, &c. A portion of the East Indian house should also be exposed for the same purpose, for Vande teres and Hookeriana delight in the sun, also Oncidium splendidum, and a few other obstinate growing and flowering sorts.

Cattleya Warscewiczii (gigas) may now be watered more freely. No good purpose is served by keeping them very dry after this date, as those that are going to flower will already have the flower sheath formed within the young break. The deciduous Calanthes are now becoming strongly rooted, and may likewise be watered more freely, but still carefully, as the disease which comes in the young foliage in the form of back spots is frequently the result of over-watering before the plant has made roots, though it is not always due to that.

Generally speaking, over-watering of any of the plants need not now be feared, that is provided the compost they are growing in, as well as the plants themselves, are in good condition. The rule should be to water when the sphagnum moss is becoming white. Never give a little because the plant is not dry enough to thoroughly water, but let it wait until the next day. The Mexican Orchids should now be watered during the afternoon or evening. The inmates of this house also delight in being syringed in the afternoon, when the air is reduced and the roller blinds removed.

Calanthe veratrifolia and others of the evergreen section are handsome and well worth growing, though perhaps not so useful as the deciduous kinds. They delight in the temperature of the Intermediate house, and should be kept moderatly moist and shady. A good time for repotting is as soon as the flowering season is over. They grow best in a compost of good fibrous loam and peat in equal parts, intermixed with a little good leaf soil and silver sand. It is not a good plan to mix manure with the compost, but they may receive a little weak liquid cow manure when nicely rooted, as also may Zygopetalum Mackayi, Lycaste Skinneri, Sobralia macrantha, Cœlogyne cristata, and Miltonia vexillaria. For other Orchids I am not an advocate of manure.

Odontoglossum citrossum having passed out of bloom will now be growing, and may be repotted where necessary; it is a species apt to shrivel a good deal from the effect unless exceptional care be taken for a few weeks afterwards. I prefer basket culture for it, but it may also be grown in pots. The Phalænopsis should now be making some good foliage if suspended on the shady side of the hottest house, and kept free from insect pests. It is not well to keep them too heavily shaded, nor too saturated at the roots, or the leaves will become sappy and the flower spikes small and weakly, not to speak of the dreaded spot which may appear. Some of the Dendrobiums, and more particularly D. × Ainsworthii, and others of the same parentage, although growing freely, generally become more or less spotted on the foliage. This seems rather

peculiar to this section of Dendrobiums, but there is no reason for much anxiety, as the plants continue to grow and form strong pseudobulbs.

Red spider may, perhaps, prove troublesome among the Dendrobiums just now. Where traces of this pest are found—and it may be detected by the leaves assuming a sickly whitish appearance—the plants should be sponged frequently with clear soft water, or a weak solution of insecticide; but on no account should the young and tender foliage be syringed with insecticides, or great injury may ensue.

Catasetums and Chysis must now be placed with the Dendrobiums, and suspended, as they are now making their growth. They are plants which quickly deteriorate if the roots are not kept in a sweet condition. It is best, therefore, to re-basket them at least once in every two years. The flower spikes appear from the base of the new growth of the former, when that is about half matured, and, if the plants are very strong, sometimes a second spike will also push out. They are extremely curious and interesting Orchids, and deserving of good culture. One great point is to keep them quite free from thrips; but be careful to use nothing but tobacco powder, as liquid insecticides, even if very weak, will speedily ruin the new growths. Mormodes I prefer to grow with the Mexican Orchids in a warm and sunny position. These are also very remarkable Orchids, and otherwise require exactly the same treatment as the foregoing.

If the roots of Cattleyas should become clubbed—which is caused by the larva of the Cattleya fly—the clubbed portion should be cut off and destroyed, for if the insect is allowed to breed, the nuisance may become serious.

ORCHID PORTRAITS.

ANGRÆCUM SESQUIPEDALE.—*Gard. Mag.*, May 18, p. 294, with fig.

BATEMANIA PERUVIANA, Rolfe.—*Gard. Chron.*, May 4, p. 551, fig. 77.

CATTLEYA CITRINA.—*Journ. of Hort.*, May 9, p. 399, fig. 67. This is C. citrina aurantiaca.

CATTLEYA GIGAS FRANCONVILLENSIS.—*Orchid Album*, t. 505.

CATTLEYA × HARDYANA.—*Gard. World*, May 11, p. 585, with fig.

CATTLEYA × HARDYANA VAR. LINDENI.—*Lindenia*, t. 468.

CŒLOGYNE PANDURATA.—*Journ. of Hort.*, May 2, p. 377, fig. 63.

CYPRIPEDIUM CHARLESWORTHII.—*Bot. Mag.*, t. 7416; *Orchid Album*, t. 508.

CYPRIPEDIUM × CONCO-LAWRE.—*Orchid Album*, t. 506.

CYPRIPEDIUM GODEFROYÆ LEUCOCHILUM.—*Journ. of Hort.*, May 16, p. 423, fig. 71.

CYPRIPEDIUM × OLENUS.—*Gard. Chron.*, May 18, p. 613, fig. 86.

DENDROBIUM IMPERATRIX, Kränzl.—*Reichenbachia*, pt. 12, p. 11, t. 95.

DENDROBIUM TAURINUM.—*Gard. Mag*, May 18, p. 290, with fig.

EPIDENDRUM ATROPURPUREUM RANDII.—*Reichenbachia*, pt. 12, p. 109, t. 94.

ERIA RETICULATA.—*Gard. Chron.*, May 4, p. 553, fig. 78.

LÆLIA GLAUCA, Benth.—*Lindenia*, t. 465.

LÆLIO-CATTLEYA × EPICASTA.—*Journ. of Hort.*, April 25, pp. 358, 364, fig. 60; *Gard. Mag.*, May 4, p. 261, with fig.

LÆLIO-CATTLEYA × PHŒBE.—*Reichenbachia*, pt. 12, p. 107, t. 93.

LÆLIO-CATTLEYA × VARJENENSKYANA, L. Lind.—*Lindenia*, t. 466. A variety of L.-c. × albanensis, Rolfe.

LYCASTE TRIFOLIATA, Lehm. ("L. t. Lehmanni").—*Gard. Mag.*, May 11, p. 277, with fig.

ODONTOGLOSSUM CERVANTESII DECORUM.—*Journ. of Hort.*, May 16, p. 423, fig. 70.

ODONTOGLOSSUM × HALLII-XANTHUM, L. Lind.—*Lindenia*, t. 467. This appears to be a light-coloured form of O. Hallii.

SCHOMBURGKIA HUMBOLDTII.—*Orchid Album*, t. 507.

TRICHOPILIA SUAVIS SPLENDENS.—*Gard. Mag.*, May 11, pp. 280, 281, with fig.

VANDA PARISHII MARRIOTTIANA.—*Reichenbachia*, pt. 12, p. 113, t. 96.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE display of Orchids brought together at the Drill Hall, James Street, Westminster, on the occasion of the Royal Horticultural Society's meeting on April 23rd, was extremely good, though there was less in the way of novelties than usual.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent several interesting things, including two well-flowered plants of the pretty rose-purple Masdevallia Arminii, which received a Cultural Commendation. The pretty M. fragrans and a fine mass of Polystachya Ottoniana, covered with its graceful racemes of white flowers, both received Botanical Certificates. Dendrobium cretaceum, Eria stellata, and E. aëridostachya were also included in the group.

Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), staged a large plant of Dendrobium Hildebrandii, covered with its pretty yellowish flowers, which received an Award of Merit. It is figured at page 49. He also sent a raceme of the splendid Lælio-cattleya × Digbyano-Mossiæ and flowers of Dendrobium Bensoniæ.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous), received a

Silver Flora Medal for a large and very pretty group. It included fine specimens of Dendrobium thyrsiflorum, D. aggregatum, Cattleya Lawrenceana, C. Schrœderæ, C. citrina, Ada aurantiaca, Phaius Wallichii, Lycaste Lawrenceana, Cymbidium tigrinum, Ornithocephalus grandiflorus, Cypripedium tonsum, Odontoglossum nebulosum candidulum, a fine O. × excellens (one of the plants artificially raised by Messrs. Veitch), and other spring-flowering species.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), staged cut blooms of a series of varieties of Vanda tricolor and V. suavis, together with plants of Oncidium sessile, Angræcum modestum, and Cattleya Loddigesii. A Silver Banksian Medal was awarded.

H. Grinling, Esq., Harrow Weald (gr. Mr. Rapley), showed a fine form of Cattleya citrina, to which a First Class Certificate was given. Curiously enough this fine old plant has not previously received this award.

G. Marshall, Esq., Claremont House, Grimsby (gr. Mr. Johnson), sent an interesting group, and received a Vote of Thanks. A splendid raceme of Dendrobium fimbriatum superbum, with flowers large and deep orange-yellow throughout, received an Award of Merit. Other plants were Dendrobium chrysotoxum, Cattleya Loddigesii, C. intermedia, a fine Lælia cinnabarina, and some pretty forms of Odontoglossum × Andersonianum, including O. × A. baphicanthum and O. × A. Marshallii, the latter prettily spotted with light purple. With these were the two parent species O. crispum and O. gloriosum.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), exhibited Odontoglossum nebulosum candidulum, a handsome O. × Ruckerianum, Cypripedium Godefroyæ, and the fine C. × Gowerianum magnificum, the latter receiving an Award of Merit.

Major Joicey, Sunningdale Park (gr. Mr. Thorne), sent fine specimens of Dendrobium atroviolaceum (Rolfe) and Cypripedium Rothschildianum, the former with five racemes of its beautiful flowers, and the latter with two racemes and seven flowers. Both received Cultural Commendations. He also exhibited Phaius Wallichii.

The Right Hon. Lord Rothschild, Tring Park (gr. Mr. Hill), showed Bulbophyllum Sillemianum, with yellow flowers, and Cirrhopetalum gamosepalum, the latter receiving a Botanical Certificate.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), staged a small group of good things, and received a Vote of Thanks. It included some good forms of Cattleya Mendelii, Dendrobium Maccarthiæ, Odontoglossum Hallii, a fine spike of Vanda Amesiana, and Lycaste gigantea, a Botanical Certificate being given to the latter.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), sent a very good form of Odontoglossum triumphans.

W. M. Appleton, Esq., Tyn-y-coed, Weston-super-Mare, exhibited a

fine Cattleya Schilleriana, Cypripedium niveum, Epidendrum atropurpureum album, Odontoglossum Hallii, a good O. × Andersonianum, and its variety Ruckerianum.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), exhibited Odontoglossum × mulus, Rosefield variety, with rather long and narrow segments.

T. McMeekin, Esq., Falkland Park, South Norwood (gr. Mr. Wright), exhibited a fine form of Odontoglossum × Andersonianum, and cut spikes of O. × Wilckeanum, O. Hallii, and O. triumphans.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), showed the handsome Cattleya × Prince of Wales.

The Prince de Venosa, Rome (gr. M. Raggioneri), sent Cypripedium × lucidum.

Messrs. James Veitch & Sons, Chelsea, staged a very fine group, to which a Silver Flora Medal was given. It included the handsome Lælio-cattleya × Epicasta (L. pumila ♀ × C. Warscewiczii ♂), which received a First Class Certificate, Lælia × Latona, some fine L. purpurata, a series of handsome Cattleyas, Selenipedium × Brysa, Oncidium concolor, O. ampliatum majus, and some fine Dendrobiums, Cypripediums, and Odontoglossums.

Messrs. F. Sander & Co., St. Albans, also received a Silver Flora Medal for a handsome group, which included the fine hybrid Lælio-cattleya × Frederick Boyle, Thunia Brymeriana, Cœlogyne tomentosa, C. Dayana, some handsome Cattleyas, Odontoglossums, and Cypripediums, Epidendrum nemorale, Oncidium sarcodes, O. Forbesii Borthwickianum, &c. The curious Habenaria Bonatea received a Botanical Certificate, and a large well-flowered plant of Dendrobium veratrifolium (syn. D. Augustæ-Victoriæ, Kränzl), a Cultural Commendation.

Messrs. W. L. Lewis & Co., Southgate, received a Silver Flora Medal for a group of fine things, including some good Cattleyas, Lælia purpurata, and other showy Orchids, Bifrenaria Harrisoniæ, Ada aurantiaca, Leptotes bicolor, Cirrhopetalum picturatum, a pretty Odontoglossum ramosissimum, O. Pescatorei Lewisii, and others. A plant called Lycaste trifoliata (Lehmann), received an Award of Merit. It is allied to L. lanipes, and has pale whitish-green flowers with a fringed lip.

Messrs. Heath & Son, Cheltenham, showed a group of well-flowered varieties of Cattleya Schrœderæ, with a few other Orchids, to which a Silver Banksian Medal was given.

Messrs. Hugh Low & Co., Clapton, staged a fine group, which received a Silver Banksian Medal. It contained Cattleya Schilleriana, Dendrobium cariniferum, Cymbidium Lowianum, Cypripedium niveum, a fine Lælio-cattleya × Schilleriana, Odontoglossum × excellens, and other showy Odontoglossums and Cattleyas.

Messrs. B. S. Williams & Son, Upper Holloway, also received a Silver Banksian Medal for a good group, comprising Cymbidium Devonianum, Leptotes bicolor, Trichocentrum tigrinum, Chysis bractescens, Miltonia Roezlii alba, Cœlogyne Massangeana, Cypripedium exul, and other fine Cypripediums, Selenipediums, Dendrobiums, and Odontoglossums.

The Show on May 14th, at the Drill Hall, was smaller than usual, doubtless owing to the near approach of the great Temple show.

W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), staged a small group of fine things, to which a Silver Banksian Medal was given. Odontoglossum crispum, "The Bride," also received an Award of Merit. Several fine Odontoglossums, together with Cattleya intermedia alba and C. Skinneri alba, were included.

R. I. Measures, Esq., exhibited a splendid Cypripedium Godefroyæ leucochilum, which received a First-class Certificate.

De B. Crawshay, Esq., sent a very handsome Cattleya Mendelii, called "Princess of Wales," and a few choice Odontoglossums. An Award of Merit was given to the former.

T. Statter, Esq., sent Cattleya × Claesiana and some fine forms of C. Mendelii, one called C. M. leucoglossa receiving an Award of Merit. The only colour in the flower was a little yellow at the base of the lip and a light suffusion of lilac in the petals.

H. Weetman, Esq., The Hawthorns, Little Haywood, sent two fine plants of Phaius Sanderianus, to which a Cultural Commendation was given.

Mrs. James Langton, Hillfield, Reigate (gr. Mr. Pearce), sent Dendrobium aureum and the pretty Cirrhopetalum grandiflorum, the latter receiving a Botanical Certificate.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), sent a plant of Odontoglossum cirrhosum, showing a singular freak. The plant had produced leaf-like bracts and new flowers on the old spikes of last year, besides making new flower-spikes.

Sir Charles Strickland, Bart., Hildenley, Malton, sent three plants of Cypripedium concolor × bellatulum, somewhat resembling C. Godefroyæ.

T. W. Swinburne, Esq., Corndean Hall, Cheltenham (gr. Mr. Rendel), sent a Cypripedium called C. × Corndeanii, supposed to have originated from C. Lawrenceanum crossed with Selenipedium × Sedeni, though only the influence of the former was apparent.

Other amateurs' exhibits were a fine Cattleya Mossiæ from the collection of Walter Cobb, Esq., of Tunbridge Wells; some fine C. Mendelii from J. Gurney Fowler, Esq., South Woodford; Cypripedium philippinense and Selenipedium caudatum Wallisii from H. Grinling, Esq., Stanmore; a splendid Oncidium varicosum Rogersii and flowers of Cattleya Mossiæ

from Mr. C. Terry, Tatton Park Gardens, Knutsford; a fine Oncidium lamelligerum from A. Warburton, Esq., of Haslingden; Cattleya Mossiæ and a pretty Odontoglossum crispum from Mr. H. W. Ward, Longford Castle Gardens, Salisbury; and Cattleya Loddigesii from E. J. Wilckenden, Esq., of New Southgate.

Messrs. J. Veitch & Sons, Chelsea, exhibited a large and handsome group, including many fine hybrids, to which a Silver Flora Medal was given. An interesting form of Epidendrum × O'Brienianum was shown, which had been obtained from uncrossed seed, and, while retaining the characteristic shape, had almost reverted in colour to E. evectum, one of the original parents. An Award of Merit was given. Dendrobium taurinum also received a Botanical Certificate.

Messrs. Hugh Low & Co., Clapton, showed a very handsome hybrid in Cypripedium × Gertrude Hamilton, raised by Mr. Ayling, gr. to A. J. Hollington, Esq., from C. ciliolare ♀ and C. bellatulum ♂, and thus the reverse cross of C. × Olenus, of which it may be considered an exceptionally fine variety. It deservedly received a First-class Certificate. Dendrobium strongylanthum also received a Botanical Certificate.

THE TEMPLE SHOW.

The Eighth Great Annual Show in the Inner Temple Gardens, Thames Embankment, was held on May 21st, 22nd, and 23rd, and, being favoured with fine weather, was a great success. There was a most extensive and magnificent display of Orchids, though in the matter of novelty we think there was an appreciable falling off as compared with the two preceding years; nor do we think the number of specimen plants was quite up to the average, though a few good ones were observed. A few of the popular species which flower at this season were present in force in most of the groups, such as Lælia purpurata, Cattleyas Mendelii and Mossiæ, Miltonia vexillaria, and Odontoglossum crispum, while Cymbidium Lowianum, Oncidium Marshallianum, and a few others were also well represented. We are unable to give anything like a full report of so extensive a show, and must confine ourselves to giving a few of the salient features of the different exhibits. The Judges for Orchids were Messrs. C. J. Lucas, Jas. Douglas, and H. A. Burberry.

Baron Sir H. Schröder, as usual, staged a large and select group of well-grown plants, which were tastefully arranged with maidenhair ferns. A Silver Cup was awarded. Among the rarer and more remarkable things staged we observed the large and beautiful Odontoglossum crispum apiatum; the richly coloured O. c. Sanderianum, with rosy-crimson ground and white margin; O. × Wilckeanum giganteum, with 13 very large richly-coloured flowers on the spike; O. × Ruckerianum, with a panicle of nine

branches and many flowers; the rare O. marginellum; a fine plant of Masdevallia Benedicti, with about 300 flowers; fine specimens of Cattleya Skinneri, and C. S. alba; C. citrina, C. Lawrenceana, C. × Baroness Schröder, and a very large and beautiful form of C. Mossiæ Wageneri; a group of Vanda teres; Cypripedium Lawrenceanum Hyeanum, C. exul, and the finest form of C. Mastersianum we have seen; a good plant of Epidendrum prismatocarpum; E. Frederici-Guilielmi, a large well-bloomed plant of Ada aurantiaca; a small plant of Cœlogyne Dayana; Cymbidium Devonianum; the very fine Lælia purpurata Lowii with the purple of the lip almost extending to the base; two good Lælio-cattleya × Schilleriana; the richly-coloured L.-c. × Hippolyta, and many other well-known showy things. A First-class Certificate was given to a large and perfectly formed Cattleya Mendelii, called C. M. dellense.

Sir Trevor Lawrence, Bart., also staged a very fine group, to which a Silver Cup was given. It included many showy things, as well as some of more botanical interest, among which we noted a good Cattleya Schilleriana, C. Mossiæ Wageneri with six flowers, a good Lælia majalis, the brilliant Lælio-cattleya × Phœbe, the rare Cymbidium Lowianum concolor, Vanda Denisoniana, a large plant of Epidendrum Stamfordianum literally wreathed with flowers all round, a strong and well-flowered Dendrobium Bensoniæ, D. revolutum, and a light form of D. taurinum, a fine plant of Oncidium Marshallianum, Masdevallia rosea with 25 flowers, a good M. × Courtauldiana, M. Estradæ, and a plant of the rare little M. Wendlandiana with over 50 flowers, a large pan of Macodes Petola with its beautifully variegated foliage, the remarkable Pleurothallis strupifolia, the two charming Burford hybrids Cypripedium × conco-Lawre and C. × Lawrebel, Microstylis Scottii, the large flowered M. macrochila, and numerous other showy Orchids. Four splendid things which received special awards were Cypripedium Stonei platytænium with two spikes and four flowers, to which both a First-class Certificate and a Silver Flora Medal were given, Masdevallia Harryana and M. × Shuttryana, each of which secured an Award of Merit, and the fine specimen of Epidendrum Stamfordianum above-mentioned, to which also a Silver Flora Medal was given.

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. Young), showed a smaller group of choice things, which also secured a Silver Cup. Among the more noteworthy plants were Cypripedium Rothschildianum with three spikes and seven flowers, a good Cattleya Schilleriana, a fine C. Mossiæ with the front lobe of the lip almost uniform rich crimson, Vanda suavis, the curious Masdevallia ephippium, and a variety of other showy things. Cattleya Mossiæ Lady Wigan was a beautiful variety, like a light C. M. Reineckiana, to which an Award of Merit was given.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), staged a fine and very effective group, which was awarded a Silver-gilt

Flora Medal. We noted a beautiful Cypripedium Lawrenceanum Hyeanum, a fine Selenipedium × Schrœderæ, Oncidium Lanceanum, Broughtonia sanguinea, a good plant of Masdevallia triaristella, and the rare M. Schlimii, and various showy Cattleyas, Odontoglossums, &c. A Cultural Commendation was given to a fine specimen of Epidendrum Wallisii with eight flowering growths.

Welbore S. Ellis, Esq., Hazelbourne, Dorking (gr. Mr. Masterton), received a Silver-gilt Knightian Medal for a good group, in which Odontoglossums formed a fine feature, especially numerous forms of O. crispum. We observed also O. × Coradinei with four spikes, O. Hallii, O. polyxanthum, O. cordatum, O. ramosissimum, a fine O. luteopurpureum hystrix, the pretty Cochlioda Nœtzliana, Oncidium Krameri, a few showy Cattleyas, and other things.

The Right Hon. Earl Percy, Syon House, Brentford (gr. Mr. Wyethes), staged an effective group, containing some good Odontoglossums, Cattleya citrina and other Cattleyas, Cymbidium Lowianum, a good specimen of Cypripedium barbatum, Dendrobium thyrsiflorum, &c. A Silver Flora Medal was awarded.

Malcolm S. Cooke, Esq., Kingston Hill (gr. Mr. Bucknill), also received a Silver Flora Medal for a good group, containing Epidendrum vitellinum, Lælia tenebrosa, Brassia verrucosa, Cypripedium tonsum, Odontoglossum nebulosum, O. Lindleyanum, O. × Coradinei, and other good Odontoglossums and Cattleyas.

M. Jules Hye-Leysen, Gand, exhibited five noteworthy specimens. A fine Miltonia × Bleui virginalis, with two racemes and nine flowers, received a First Class Certificate, Cattleya Lawrenceana atrorubens, with very richly coloured lip, an Award of Merit, and Lælio-cattleya × Hippolyta, with a raceme of no less than eight flowers and buds, a Cultural Commendation. The other two were Miltonia vexillaria gigantea, a large richly-coloured form, and the beautiful Cypripedium Lawrenceanum Hyeanum with two flowers.

M. Ch. Vuylsteke, Loochristy, Gand, also contributed a small group of good things. Odontoglossum Pescatorei La Perfection was a good light form, to which an Award of Merit was given. The others were a very good form of O. × Wilckeanum, a peculiar light-coloured O. triumphans, and two good plants of O. luteopurpureum sceptrum with spikes of 19 and 20 flowers each.

Norman C. Cookson, Esq., sent the beautiful Cattleya × William Murray with a three-flowered spike.

De Barri Crawshay, Esq., sent the very pretty Odontoglossum crispum Florrie.

H. Shaw, Esq., Ashton-under-Line (gr. Mr. Cliffe), sent a strong plant of Lælio-cattleya × elegans with a spike of nine flowers, being unusually

early; also Odontoglossum × Andersonianum and Cypripedium Victoria-Mariæ.

T. Statter, Esq., exhibited a strong plant of Odontoglossum × Wilckeanum, with a five-branched spike of over forty flowers and buds, the majority not yet expanded.

M. Wells, Esq., Broomfield, Sale (gr. Mr. Hinde), sent a few good Orchids, including a very pretty form of Cattleya Mossiæ.

T. McMeeking, Esq., South Norwood, sent a good Dendrobium Dalhousieanum, with unusually large flowers.

The trade collections were very extensive, and of excellent quality, the usual showy things being well represented in each.

Messrs. F. Sander & Co. received a Silver Cup for a large and effective group, in which we observed several plants of the rare Cattleya dolosa, C. Mossiæ Hardyana, the remarkable Lælia Digbyana, L. tenebrosa, L. grandis, two plants of Phaius × Owenianus, a fine Oncidium phymatochilum, and a large clump of O. altissimum covered with its graceful panicles, the rare O. pulchellum, Sobralia × Veitchii, the rare Dendrobium cruentum with about twenty-five flowers and buds, two plants of D. velutinum, Microstylis macrochila and M. Scottii, a good Miltonia Phalænopsis, Lælio-cattleya × Phœbe, Epidendrum atropurpureum Randii, and a host of other showy things. An Award of Merit was given to a fine Cattleya Mossiæ Prince of Wales.

Messrs. Hugh Low & Co. also received a Silver Cup for another extensive and very fine group, containing a large and handsome series of Cattleya Mossiæ forms, including a superb C. M. Reineckiana, C. Schilleriana, some good forms of C. Mendelii, including a prettily variegated form, and C. M. grandis, to which latter an Award of Merit was given, the handsome Dendrobium × crassinodi-Wardianum, Vanda Bensoni, Cypripedum Lowii, C. niveum and the beautiful C. × Gertrude Hollington Odontoglossum × tentaculatum, Trichopilia Wageneri, Lycaste cruenta, Miltonia Roezlii alba, Selenipedium caudatum Wallisii, the massive Lælia purpurata enfieldensis, and other showy things. An Award of Merit was given to Odontoglossum × Wilckeanum Lowii, a most effective form, with light yellow, mostly unspotted petals, and richly-blotched sepals.

Messrs. Charlesworth & Co., Heaton, Bradford, staged a fine group, to which a Silver-gilt Flora Medal was given. It contained some beautiful forms of Lælia purpurata, some capital plants of Oncidium Marshallianum and O. concolor, several plants of Dendrobium Hildebrandii, D. thyrsiflorum, Cypripedium Rothschildianum with four-flowed spike, C. bellatulum, Maxillaria Sanderiana, Cymbidium tigrinum, Odontoglossum ramosissimum, and many other showy things.

Mr. James Cypher, Cheltenham, also received a Silver-gilt Flora Medal

for a large and handsome group, containing a good Selenipedium × grande atratum, Cattleya Schilleriana, C. Lawrenceana, some good Trichopilia coccinea, Oncidium cucullatum, O. varicosum, Epidendrum × O'Brienianum, Dendrobium Dearei, D. moschatum, a good D. Falconeri, D. Parishii, D. × rhodostoma, together with some good Lælia purpurata, and the usual complement of showy forms.

Messrs. W. L. Lewis & Co. also secured a Silver-gilt Flora Medal for another fine group, in which was a good Chysis bractescens, Cypripedium Druryi, C. niveum, the very large and light-coloured Cattleya Mossiæ Lewisii, Oncidum pulvinatum, O. ampliatum, O. cornigerum, Brassia verrucosa, Lycaste Deppei, Promenæa citrina, Odontoglossum Pescatorei Lewisii, &c. Lælia purpurata bella is a superb white form, with two purple blotches in the throat, to which an Award of Merit was given.

Messrs. B. S. Williams & Son staged a very large and attractive group, to which a Silver-gilt Flora Medal was given, among which may be noted a splendid plant of Oncidium sarcodes with several large panicles of flowers, several good O. concolor, O. Lietzei, Cochlioda Nœtzliana, Trichopilia coccinea, Selenipedium × Schrœderæ, Cypripedium exul, the rare Pescatorea Klabochorum, Odontoglossum Harryanum, with the usual complement of showy Cattleyas, Lælias, and Odontoglossums. The rare Brassia Keiliana and Vanda concolor each received a Botanical Certificate.

Mr. J. Prewett, of Hammersmith, exhibited a good form of Cypripedium × Vervætianum.

Messrs. James Backhouse and Sons, York, had some good Odontoglosssum crispum arranged in a collection of miscellaneous plants.

Mr. T. S. Ware, Tottenham, had a fine pan of Cypripedium Calceolus and C. arietinum, also two each of C. pubescens and C. montanum, and a single example of C. acaule, in a collection of hardy plants.

We also noticed that cut Orchids were largely used among the Bouquets, Floral Designs, Wreaths, and Table Decorations, and with great effect, especially in the exhibit of Messrs. Perkins & Sons, of Coventry.

CORRESPONDENCE, &c.

F. G. S., Bishops Auckland. A dark form of Cypripedium barbatum.

T. S., Tyntesfield. The Dendrobium appears to be form of D. × Dominianum.

S. H. Lælia purpurata rosea.

J. S. We cannot express any opinion respecting a plant which we have not seen, but you may take it as certain that Cattleya floribunda is not a natural hybrid. Such plants never occur in quantity. We shall doubtless be able to tell you more about it some day; meantime you must use your own discretion as to its novelty.

We have received the Catalogue of Orchids and other plants of M. L. de Smet-Duvivier, of Mont-St.-Amand, Gand.

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THE ORCHID REVIEW:

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DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

VOL. III.] *JULY*, 1895. [No. 31.

NOTES.

Two meetings of the Royal Horticultural Society will be held during July —on the 9th and 23rd respectively—when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

A very pretty form of Odontoglossum × excellens comes from R. Brooman White, Esq., of Arddarroch. It is fairly typical in general character, but the lower halves of the petals bear numerous small spots. As is now well known, it is one of the finest natural hybrids in the genus.

Some time ago a plant was sent out as a new Cypripedium under the name of C. Bungerothii. On flowering, however, it has proved to be the old and well-known, though not very common species, Selenipedium Boissierianum.

Reverting to the note, at page 129, of Cypripedium Lowii, Mr. F. W. Moore writes that he has enquired of Messrs. Sander, who reply that they think there can be no doubt about the plant having been imported from the Sulu Archipelago.

A very beautiful form of Cattleya Mendelii comes from John Falconer, Esq., St. Ann's, Lasswade, Mid-Lothian. The flower is of perfect form, the petals being $2\frac{1}{2}$ inches broad by $3\frac{3}{8}$ inches long, and the colour delicate blush. The lip is broad, and similar in colour, except the front lobe, which is rich purple-crimson.

A very beautiful Lælia purpurata prætexta has been sent by W. H. Scott, Esq., St. Oswin's, Teignmouth. This variety is characterised by

having a pure white area at the apex of the lip, being typical in other respects.

A flower of Lælia purpurata Williamsii is sent by A. Annandale, Esq., Bielside, Dunbar, from a newly-imported plant. It fully agrees in the colour of the lip and the prettily-veined petals with the illustration (*Orchid Album*, I., t. 9) of this beautiful variety, but is rather smaller in size, which, however, may be due to the plant not being fully established.

Lælio-cattleya × Schilleriana is the correct name of a natural hybrid between Lælia purpurata and Cattleya intermedia, which is grown in many collections as L. × elegans alba, though the name is not correct. A very beautiful flower has been sent by C. Winn, Esq., Selly Hill, Birmingham, one of four on the spike.

A very fine form of Cypripedium × Creon has been raised in the collection of W. Vanner, Esq., Camden Wood, Chislehurst, of which we have received a flower. It is from the same parents as Messrs. Veitch's original one—C. × Harrisianum superbum and C. × œnanthum superbum. The flower is large, well formed, and very richly coloured.

A very pretty form of Cypripedium niveum, received from Dr. Gorton, of Maida Vale, has the upper half of each petal reticulated with a network of light purple, owing to the nerves bearing numerous spots of this colour. C. niveum reticulatum is a suitable name for this charming little variety, which we have seen before.

A very curious flower of Cypripedium × Peetersianum comes from the collection of Reginald Young, Esq., of Sefton Park, Liverpool, in which the two petals are metamorphosed into lips, thus making three to the flower. On careful examination we find that the two stamens are absent, and the staminode has reverted to the normal condition, and become a stamen. It is accompanied by a normal flower. This hybrid is the reversed cross of C. × selligerum, and in reality a variety of it.

A very dark form of Phaius bicolor has flowered in the same collection, in which the sepals and petals are deep reddish-purple, and the lip nearly as dark, with yellow at the base. It is the variety Oweniæ, noted at page 208 of our last volume.

Two racemes of the splendid Selenipedium × Schrœderæ have been received from the collection of O. O. Wrigley, Esq., Bridge Hall, Bury, each with two large and perfect flowers and an additional unopened bud.

Mr. Wrigley states that sometimes the first flower has fallen before the second one expanded, though it does not occur now the plant has become strong and vigorous. We believe this is usually the case with strong plants. Some Selenipedium flowers do unfortunately fall while still quite fresh.

Flowers of the beautiful albino of Sobralia macrantha, known as S. macrantha Kienastiana, Rchb. f., have been sent by F. Hardy, Esq., of Ashton-on-Mersey, who obtained them as variety alba—a far more descriptive—though not the original—name. There are two plants, one of which bears decidedly larger flowers than the other, but the smaller one has less yellow in the throat. It is a most beautiful variety, its large snow white-flowers being borne as freely as in the typical form, with which they form a charming contrast.

The magnificent Cattleya Mendelii grandis for which Messrs. Hugh Low & Co. received an Award of Merit at the Temple Show, is one of the finest forms of this popular species which we have seen. It is part of the plant from the collection of H. Little, Esq., The Barons, Twickenham, and we have now received a flower from this gentleman. It is perfect in form, the petals extremely broad, and the colour pure white, with the front of the lip light rosy-purple, and the throat yellow.

A large and very beautiful variety of Lælia purpurata also comes from the same collection, very near L. p. Schrœderæ, but the lip a little darker in colour. It is apparently very similar to the L. purpurata pallida, Rchb. f., which flowered many years ago in the collection of Consul Schiller.

From C. Winn, Esq., Selly Hill, Birmingham, we have received a remarkable form of Cypripedium Lawrenceanum in which the lower sepal is exactly similar to the upper one, both in shape and colour, and the whole very brilliant. The petals also turn upwards instead of being about horizontal, as in the type. It is a very striking form, and Mr. Winn thinks very highly of it.

The forms of the beautiful albino of C. Mossiæ, known as C. M. Reineckiana, show a considerable amount of variation between themselves, as we have frequently had evidence. One from the collection of W. J. Thompson, Esq., of Stone, has the front lobe of the lip almost wholly suffused with rich crimson except the white margin, and bears an approach to the variety Marianæ; while a larger form from the collection of C. Winn, Esq., of Birmingham, has the front lobe covered with crimson radiating nerves on a white ground, and this more nearly

approaches the original form. The rest of the flower is white, with the exception of the deep yellow disc.

Cattleya Mossiæ Wageneri is the purest albino of the species, the orange disc alone remaining, and of this we have received a couple of beautiful flowers from Mr. Stevens, gardener to W. J. Thompson, Esq.

A fine form of Thunia × Veitchiana has been raised by C. Winn, Esq., Selly Hill, Birmingham, from T. Marshalliæ ♀ and T. Bensoniæ ♂, of which we have received a flower. The sepals and petals are blush white, and the front of the lip veined and somewhat suffused with mauve-purple, the yellow crest being well developed, as in the seed parent. The lip, including the spur, is three inches long.

Just as we are going to press a copy of the second edition of Mr. Burberry's *Amateur Orchid Cultivator's Guide Book* reaches us. We must reserve a notice for a future number. Meantime, we may add that it is much improved.

CATTLEYA SUPERBA ALBA.

This beautiful albino of Cattleya superba was described in 1890 (Rolfe in *Gard. Chron.*, 1890, ii., p. 620), but still remains very rare, and we believe the few plants known are mostly, if not altogether, derived from the original one found by Mr. E. S. Rand, of Pará. The flower is pure white with the exception of the light yellow disc. It was exhibited by T. Statter, Esq., Stand Hall, Whitefield, Manchester, at the Royal Horticultural Society's meeting on June 11th, and deservedly received a First-class Certificate. C. S. Wellsiana (*Gard. Mag.*, 1894, p. 519) is synonymous.

VINERY ORCHIDS.

By Edward H. Woodall, Scarborough.

Not a few Orchids are failures, speaking generally, when grown in the usual run of Orchid Houses that are kept moist and well-shaded—conditions, no doubt, that are favourable to the mass of those kinds that are universal favourites. In consequence, those plants that do not accommodate themselves to such treatment are called "difficult to grow and flower," and amateurs fight shy of these "capricious beauties" as they are called. As a matter of fact, these are the very plants that amateurs should take in hand and experiment upon. They have time to watch how they thrive, or when they fail; while busy nurserymen, whose plants are in thousands, cannot

waste their time, as they say, over plants that need something different to the common run.

A golden rule for amateurs, or, indeed, all Orchid growers, is not to be afraid when a plant looks unhappy to reverse the treatment altogether. If it has been grown cool, grow it in heat; if it has been shaded, give it sun and air; in fact, do just the opposite of what you have done, even though you may find in gardening books that the treatment you have followed is generally recommended. Apropos of this, it is to be observed that hand-books of Orchid culture are generally written by nurserymen, who have great experience of newly-imported plants, but whose aim and endeavour, generally carried out, is to dispose of their plants to someone else: so that they have little real knowledge of the conditions that established Orchids require.

One of the most important things to remember about Orchids is the fact that they are nearly all "Air Plants," and so they require an extra supply of that precious yet invisible thing. Yet how many shut them up in close, dank, dark, or stuffy houses, and then wonder they do not thrive! If only Orchids have sufficient ærial moisture, they cannot have too much ventilation; and the more ventilation there is, the less shading they will require, and so the growth will be more solid and more likely to flower.

There are of course various degrees of temperature to consider, and I do not suggest that anyone should starve their Orchids when bitter winds blow, but I do prefer to give much more atmospheric moisture by flooding the stages when the sun shines, and giving abundant ventilation, to falling back on the gardeners' convenient plan of shading heavily and giving but little air—a common error! I need say nothing about the mass of well-known Orchids that enjoy shade and moisture with stillness and warmth. What I want to talk about to-day is that class of Orchid that needs some-thing else. That "something else" is, I think, easily found in a warm vinery; and I have not found either vines or grapes suffer from the presence of Orchids, if the grapes are not required to hang long. There are of course but few Orchids that prefer the atmosphere of a vinery at all seasons, but yet there really are a few that I should prefer to keep there all the year round. These are Lælia majalis, Lælia albida, Cattleya Walkeriana, Dendrobium Wardianum, Cymbidium eburneum, and Oncidium flexuosum, all of which need nothing more, save that Dendrobium Wardianum should be put in a warmer house when its flower buds are half-grown, as they are apt to come deformed if they open in too cold a temperature. Still the plant should be returned to the vinery as soon as the house is shut up and the vines syringed.

When once we touch upon those Orchids that prefer the atmosphere of a vinery for the greater part of the year, it is surprising how many

come under this category. Nearly all the summer and autumn Cattleyas thrive infinitely better under the vines when they get the ammonia from the vine border, and the abundant syringing and air the vines enjoy in spring, while the summer and autumn airiness and drying, when the grapes ripen, consolidate their growth and encourage flowering. Cattleya Warscewiczii (gigas), Cattleya Dowiana aurea, Cattleya labiata, Lælia anceps (in the coolest place), Odontoglossum grande, Odontoglossum Insleayi, Oncidium Jonesianum, Vanda cœrulea, Vanda Roxburghii, Vanda Denisoniana, Dendrobium nobile, Lælia autumnalis, all have done well, and many of them very exceptionally well in a warm Muscat house. They should be near the lower ventilators, where they are placed over saucers of water, and in the full draught of the ventilators, which are constantly open in fine weather. It is curious to see how the roots of Vanda cœrulea push out just where they get most air, provided there is water underneath the basket they are in.

All these Orchids I have mentioned thrive in this house from March till November, when the vines are pruned and the chrysanthemums are brought in. The amount of cold air and moisture needed by the chrysanthemums makes it then necessary to put these Orchids into the Mexican house, where the temperature is between 50° and 60° as a rule. Any house, however, that is sufficiently warm and airy will suffice for winter if it be not a north aspect, and I venture to think that those who care to follow out the lines of treatment I have suggested for the above-named Orchids will not repent taking my experience as a guide.

ORCHIDS AT CAMBERWELL.

Among a large number of interesting Orchids seen in flower the other day in the collection of R. I. Measures, Esq., Cambridge Lodge, Camberwell, we noted a fine plant of Cypripedium Sanderianum bearing a spike of three flowers, the petals measuring 19½ inches long; also several good C. Rothschildianum and other species and hybrids. In the Masdevallia house M. Harryana and its allies made a brave show, bearing hundreds of their brilliantly-coloured flowers. Mr. Chapman's method of treatment was detailed at page 105 of our last volume, and it is satisfactory to record its success, as we have heard it said that these plants do not thrive in smoky localities. During last winter's frost the temperature was often lower than usual, sometimes below 40°, but this was attended with no bad results, the plants being kept rather dry. Among many other species in flower, we noted the remarkable Pleurothallis Roezlii, and a fair proportion of the usual showy species which flower at this season. The collection was fully described in our last volume.

DIES ORCHIDIANÆ.

Last November Mr. Burberry called attention to the difficulty of obtaining information respecting the habitat of a new Orchid, and the value such knowledge would be to the cultivator, who could immediately turn it to practical account. Such information undoubtedly affords a clue to the treatment required, and I am therefore the more pleased to see Mr. R. Moore's interesting account of the Orchids of the Shan States in your last issue, and the useful details it contains. Considering the kind of information which is often given, it comes as a welcome surprise, which I should like to see repeated. It is also interesting to have a list of the showy species which grow in the district. We now learn that Mr. Moore is the discoverer of the beautiful Cypripedium Charlesworthii, and the information given respecting its habitat practically completes its history. Seldom has a new Orchid leapt so quickly into fame, and become so universally diffused in cultivation as this lovely Cypripedium, and Mr. Moore must be congratulated, not only on its introduction—which is certainly one of the events of recent years—but also on his having now given us some definite information respecting its history.

I note a rather curious fact in connection with the Royal Horticultural Society's prize for the best hybrid of the year. Last year it was taken by Phaius × Owenianus, a seedling from P. bicolor, and this year by P. × Cooksoniæ, a seedling from P. grandifolius, in each case the beautiful Phaius Humblotii being the pollen parent. The coincidence is rather remarkable, and I think indicates that hybrids Phaiuses, particularly those partly derived from the Madagascar species just mentioned and the allied P. tuberculosus, will occupy an important place in our collections in future. The competition for the best hybrid Orchid at Manchester was also curious, as the new Lælio-cattleya × Aphrodite—admittedly a young seedling in undeveloped condition—secured the first prize, and the old Cypripedium × œnanthum superbum the third. The *Gardeners' Chronicle* says that considering the great stir made about hybrid Orchids, it is remarkable that special prizes offered for them in London and elsewhere have not as yet brought forth competition of any great interest. It must, however, be remembered that they must be new, and it is hardly likely that a large number of *novelties* will flower at the same time and enter into competition. With respect to Manchester surely there must have been some misapprehension among exhibitors. It is true that the Schedule did not specify that the hybrid must be new, but that was obviously the intention of the framers, and must have been so generally understood by exhibitors, or a very different competition would have resulted. I would

suggest that another year a class be set apart for the best six Orchids of hybrid origin, and let us then note the result.

I observe a note in a recent issue of *Garden and Forest*, by Mr. Watson, to the effect that Miltonia × Bleuana virginalis, which received a First-class Certificate at the Temple show, would be more correctly designated Miltonia vexillaria virginalis. "Whatever its origin," he remarks, "it is simply a form of the last named, a superb one, truly, but bearing no evidences of its reputed hybrid origin." I can only express my astonishment at the remark, for I not only saw the plant, but I have an excellent figure before me at the present moment. The plant certainly has the long column, and the rosy blotch at the base of the petals (the latter point is even recorded by the writer), which show the influence of the pollen parent, M. Roezlii, just the same as in all other forms of this hybrid. How they came there I leave to my readers to judge, without attempting to account for their being overlooked by the author of the note in question.

"Shall we ever get a universal language?" The question is not mine, but comes from a recent number of the *Gardeners' Chronicle*, in commenting on an exhibit at the recent Paris Exhibition. It was the fine hybrid Cypripedium × Gertrude Hollington, sent by Messrs. Hugh Low & Co. "Our French friends seem to have been puzzled by the name," it remarks, "for we find it spelt Kollington and Collington; while in some cases the name is judiciously, perhaps, not given at all." It appears, however, that it was sold to M. Tournier, of Marseilles, for £120, and this gentleman, I presume, will be able to cope with the difficulty. And this brings me again to the starting point. Is M. Tournier a universalist?—if I must use such a word. If so the hybrid may re-appear as Hollingtoniæ—not that it would remove the difficulty about the initial letter, but this, however, is not the point. I well remember when Cypripedium × Charles Canham appeared—perhaps its author was not a universalist—and how promptly the name was changed to Canhamii. But now we have changed all that, and we name our hybrids in so many languages and according to so many systems that really I have lost count. And not only this, but we now want almost as many names as there are seedlings in a capsule, as I recently pointed out. There is a large amount of sound common sense in that question, "Shall we ever get a universal language?"

I do not intend to answer the conundrum propounded in the last paragraph, for the simple reason that I don't know, and under such circumstances prophecy is proverbially difficult. I have read over again my former remarks on this subject (notably those at pages 12, 72, and 136), which

might very well be repeated in this connection, and the one thing which is clear to my mind is that the present go-as-you-please system must inevitably break down under its own rapidly increasing weight. As for the rest, perhaps matters may be left to work themselves out in their own way, though I think I have indicated how much of the ever-increasing confusion might be avoided. The question is whether those who name our hybrids—and varieties generally, for hybrids are by no means singular in respect to their nomenclature—will adopt the suggestions, and make some attempt to embody them in their practice. We want a Rational Nomenclature League, I think.

ARGUS.

CYPRIPEDIUM HYBRIDIZATION.

Instances will doubtless readily recur to many of your readers of hybrid Orchids with stated parentage having been shown at the meetings of the Royal Horticultural Society, of which it was truly remarked, that the influence of one of the reputed parents was absent. I have now in flower the first of a batch of seedlings, Cypripedium barbatum var. ♀ × C. niveum ♂. May, 1891, January, 1892, and May, 1892, were the respective dates of hybridizing, of sowing the seed, and of the first appearance of seedlings. In this first flower, I am compelled to admit, I see no trace of the pollen parent, niveum, nor do I find it in the foliage. May I ask, Is it necessarily a fault in the manner of hybridizing?

It is no uncommon thing to hear a child spoken of as being the very image of either its father or its mother. Why should not this resemblance to one parent only occur also in plant life? We know that seedlings raised from the same pod do vary sometimes very considerably the one from the other; just as in a litter, all the puppies are not alike. I am pleased to say that some of the same batch of seedlings, as yet unflowered, do appear to show some of the "niveum" substance in their leaves, so that I can still look forward to their flowering period with interest.

If some of our well-known Orchid growers and hybridists would deign to enlighten us as to their individual experiences, it would be most instructive, and of great service to an amateur like myself. I would ask, for instance, Has such a thing happened to any of them, that seedlings have been raised without showing any trace whatever of the pollen parent? Considering how long Cypripediums barbatum and niveum have been cultivated in this country, say 50 and 25 years respectively, is it not singular that this particular cross has not been more successfully accomplished? The Cypripedium × Tautzianum varieties are said to be the reverse cross to mine, and the progeny seems to be extremely scarce.

How many people, I wonder, have raised and flowered seedlings of this parentage?

It is probably a fact that some species lend themselves to hybridization more readily than others: at all events my experience of Cypripedium Godefroyæ as a pollen parent has been altogether unsatisfactory, while C. × vexillarium superbum and C. × œnanthum superbum have proved almost as obstinate.

REGINALD YOUNG.
Sefton Park, Liverpool.

[A flower sent by Mr. Young quite bears out his remarks, for we fail to find any trace of C. niveum in the flower. The fact is difficult of explanation, especially as the cross appears to have been carefully made, and some of the seedlings are said to show evidence of C. niveum in the foliage. We hope hereafter to see the flower of these. The case of D. nobile nobilius, crossed with D. n. Cooksoni, mentioned at page 168, is not analogous, because both are forms of the same parent, and both were reproduced from the same seed-pod. That mentioned at page 166 of our last volume, of *Zygopetalum* Mackayi crossed with Odontoglossum, where the seedlings showed no evidence of the pollen parent, is, perhaps, a parallel instance, and equally inexplicable. Perhaps others can throw some light on the matter.—ED.]

ONCIDIUM LANCEANUM.

Mr. Broadway's remarks, at page 146, on the fast increasing scarcity of Oncidium Lanceanum can be fully endorsed by anyone who has had any experience in collecting this Orchid in Trinidad. It is found, as he says, only in one corner, so to speak, of the island—the district of Cedros—whence it is brought to Port of Spain, and sold under the local name of "The Cedros Bee," the Oncidiums of Trinidad, except O. Papilio, which is known almost everywhere as "The Butterfly Orchid," being termed by local and unscientific collectors and growers "Bees," the flowers of most species being supposed to bear a fancied resemblance to these hymenopterous insects. The real cause, however, of the scarcity of these plants is not so much the "raids of the collector" as the rapid alienation and subsequent cultivation of the Crown lands where these Orchids abound. When Crown lands are sold in this island, the first thing the owner does is to cut down the luxuriant forest which covers the land purchased; after which he sets fire to the dried twigs and branches, and thus destroys every living thing on the area cleared. It is in this way that many fine species of Orchids are destroyed, and sometimes entirely exterminated, and the only means of preserving them would be to make small reserves of the

Crown lands where these plants are to be found. These remarks apply not only to Oncidium Lanceanum, but also to O. Papilio and Diacrium bicornutum, for the same custom of clearing land obtains all over the island.

T. I. PATTER.

Trinidad, B.W.I.

[We fear that the extension of cultivation generally is responsible for much mischief of this kind, and recall Gardner's remarks on the destruction of Cattleya labiata in the neighbourhood of Rio de Janeiro, as given at page 330 of our first volume. With the exception, perhaps, of a few popular species, for which there is a constant demand, it is doubtful if the "raids of the collector" effect so much permanent mischief as is sometimes supposed.—ED.]

THE HYBRIDIST.

SOBRALIA × AMESIANA.

We have now another magnificent hybrid Sobralia to record, of which a flower has been sent by Messrs. F. Sander & Co., St. Albans. It was derived from S. xantholeuca ♀ and S. Wilsoni ♂, the latter being a rare species which was described a few years ago (Rolfe in *Gard. Chron.* 1890, ii. p. 378), of which very little is yet known. Messrs. Sander's novelty has the size and much of the shape of the seed parent; but the colour is a beautiful light rosy-lilac, being rather darker on the front lobe of the lip, which measures two and three-quarter inches broad. The throat is bright yellow. It received a First-class Certificate at the recent Manchester Show, as will be seen by our report. It is undoubtedly a great acquisition, and possesses all the good qualities of S. xantholeuca, with a very different colouring.

MASDEVALLIA × LEDA.

This is a very pretty hybrid raised by Captain Hincks, Terrace House, Richmond, Yorks., from M. Estradæ ♀ and M. Arminii ♂, of which we have received a photograph, together with the two flowers now produced. The seed was sown in October, 1890. The flower has much of the shape of the mother plant, while the colour is much nearer that of the pollen parent, both being somewhat modified, and especially the shape. The flowers are open, the dorsal sepal being concave, and like the broad lateral sepals almost uniformily suffused with light purple. The tails are $1\frac{3}{4}$ inches long and greenish yellow. The lip is somewhat pandurate in shape, lilac with many minute dots and with a blackish callus at the apex. It is an interesting addition to the series already raised by Captain Hincks, all of which have been noted in our pages.

ODONTOGLOSSUM WILLIAMSIANUM.

A splendid form of this fine Odontoglossum has just flowered in the collection of the Right Hon. J. Chamberlain, M.P., at Highbury, near Birmingham, the raceme bearing eleven flowers, the largest measuring over $4\frac{1}{4}$ inches in diameter, and the petals $1\frac{3}{8}$ inches broad. It bears a general resemblance to the well-known O. grande, but the petals are considerably shorter and broader, and the wings of the column linear and completely incurved or hooked, as in O. Insleayi. It was described in 1881 (*Gard. Chron.*, 1881, ii. p. 134), by Reichenbach, who suggested that it might be a natural hybrid between O. grande and O. Schlieperianum, though I confess that I am a little doubtful about this—at all events the evidence is not complete. True, it is said to have been imported from Costa Rica with the latter, but O. grande is a native of Guatemala, and I am not aware of any published evidence that it grows in the former country. Again, in O. grande the wings of the column are rounded or nearly orbicular, not a trace of which is discernible in O. Williamsianum—a fact which also proves that Williamsianum is not a variety of O. grande, as referred by Messrs. Veitch. It bears much resemblance to O. Schlieperianum, except in its more ample dimensions and deeper markings, the details of the crest and column being remarkably similar: except that the wings are longer, as in the South Mexican O. Insleayi. Whatever its origin—and it would be interesting to clear the matter up—it is certainly very distinct and beautiful, and usually flowers about this season of the year. R. A. R.

ORCHIDS AT EAST SHEEN.

In the collection of Sir F. Wigan, Clare Lawn, East Sheen (fully described at pages 78—80 of our first volume), a number of striking Orchids are in flower at the present time, and among them the remarkable Cypripedium bellatulum album, C. × Aylingii with two-flowered scape, C. × macropterum with spikes of three and two flowers, and two good plants of C. Stonei. C. Lawrenceanum and C. barbatum are flowering like weeds planted out in the Phalænopsis house, and come in well for cut flowers. A plant of Selenipedium × Phædra bears a three-flowered spike, the petals being beautifully undulated and the colours delicate. A plant of Dendrobium Bensoniæ has nine dozen flowers on six growths, and one of D. Dearei 73 flowers, a second being nearly as good. A very fine form of Lælia grandis bears a four-flowered raceme, while the common species are, as usual, well represented. The plant of Cœlogyne pandurata maintains its reputation as one of the finest in existence, and this year bore two spikes of ten and nine flowers each. It is grown on a long raft.

THE SELWOOD SALE OF ORCHIDS.

SEVERAL times we have been requested to give an account of the various Orchid Sales which take place in London and elsewhere, and as it is evident that considerable interest is felt in the matter, we take the present opportunity of giving a few details of the Sale of the late G. D. Owen, Esq.'s, collection, which took place on the premises, Selwood, Rotherham, on April 24th, 25th, and 26th last. These particulars are taken from a carefully marked catalogue, kindly sent us by E. Ashworth, Esq., for this purpose. It is hardly necessary to point out that we can only make a small selection out of the over a thousand lots offered, and these among the choicer though mostly well-known forms. It will also be understood that many of the examples given below were specimen plants, and that smaller ones went for much smaller sums, but these details it is obviously impossible to give. We note that many well-known amateurs and the leading nurserymen were among the purchasers.

The best price secured was for a fine plant of the Selwood variety of Cattleya × Hardyana, which realised 140 guineas, E. Ashworth, Esq., being the purchaser. One called E. G. Wrigley's variety went to Baron Sir H. Schröder for 74 guineas. Variety Leopold II. also went to Mr. Ashworth for 70 guineas, and part of the original plant went to F. Hardy, Esq., at 45. Other plants of this fine natural hybrid fetched prices ranging from 42 down to 10 guineas, that called Massaiana going for 18 and 31 guineas.

Other Cattleyas fetched good prices, C. labiata alba going to W. R. Lee, Esq., for 70 guineas, while the varieties Foleyana and Countess Fitzwilliam realised 55 and 48 respectively. Mr. Ashworth secured C. Mendelii Bluntii for 56 guineas, C. Gaskelliana alba for 30, a large plant of C. Mossiæ Wageneri for 42, and one of C. M. Reineckeana for 55. Other plants of the latter fetched from 36 down to 5 guineas, and C. M. aurea went for 4. Messrs. Backhouse secured C. Trianæ Backhouseana for 26 guineas, C. T. Reine des Belges realised 17, C. T. Oweniæ 10, C. T. alba 9, and C. T. formosa 5.

Ten plants of C. Rex ranged from 2 to 18½ guineas, according to size, the last named being a fine plant. Good plants of C. Skinneri alba fetched from 8½ to 20 guineas; C. Loddigesii Measuresiana went at 20 to F. Hardy, Esq., and C. Warscewiczii imperialis at 6½, while H. T. Pitt, Esq., secured the fine C. × Lord Rothschild for 32.

Lælia × Oweniæ fetched 11 guineas, the rare L. præstans alba 37, L. purpurata Backhouseana 20, and L. p. Schrœderæ 11, while good plants of named varieties of L. anceps realised from 4 to 8½ guineas.

Some Lælio-cattleya sold very well, L.-c. × Phœbe and Hon. Mrs.

Aston realising 30 guineas each, exoniensis 10, and named forms of L.-c. × elegans from 7 to 18 each.

The Odontoglossums naturally excited much interest, and one called O. Thompsonianum, from the Wilson collection, realised as much as 70 guineas, while O. Wattianum (Hardy's variety) fetched 50, both being acquired by Baron Schröder. A second O. Wattianum fetched 24 guineas. Other known forms were O. sceptrum Masereelianum 24 guineas, O × elegans 22, and a piece from Mr. Pollett's collection 8½, O. × Edithæ 13, O. × excellens 11, O. × deltoglossum albo-maculatum 5, and O. × Ruckerianum splendens 4½.

Choice named varieties of O. crispum fetched good prices. For example, Stevensii fetched 32 guineas, Wattsianum 25, Owenanium 21 (these three going to Mr. Hardy), another Owenianum 20 (Baron Schröder), leopardinum 17 (Sir Trevor Lawrence), Chestertoni 12 (E. Ashworth), North Star 10, Wellsianum 8, &c. Of O. Pescatorei varieties we note—Lindenæ 25 guineas, Schrœderæ 18, Leopoldii 12, Vervaetiæ 11, and grandiflorum 5, the two first going to Mr. Ashworth, and the others to Mr. Hardy.

Dendrobiums being more easily propagated did not command such high prices, the hybrid D. × Aspasia coming first, for which Mr. Ashworth paid 19 guineas. Glancing down the list we note among other hybrids—Owenianum 11 guineas, Juno 10, The Pearl 9, crassinodi-Wardianum, Rainbow, and Venus 7 each, burfordiense and euosmum leucopterum (the latter re-acquired by Messrs. Veitch) 6 each, and cheltenhamense £4. In several cases smaller plants of the above fetched lower prices. Two unflowered seedlings from Mr. Winn's collection, showing bud, together fetched 6½ guineas, and two other similar lots not flowering 5 each.

Among the species we note--D. Falconeri giganteum 11 guineas, D. densiflorum Schrœderæ 8½, three of the remarkable D. atroviolaceum 7 to 7½ each, D. Guiberti 5, and plants of the well-known albinos of D. crassinode and Wardianum 3 to 5 each. Among varieties of D. nobile are —Amesiæ 10 guineas, nobilius 3 to 12 each, album 6, Ballianum 3, and Cooksonii 2 to £3 15s. each.

Glancing down the Cypripediums, we note that C. insigne Maulei and C. albomarginatum together fetched £20, while of the hybrids, Morganiæ fetched £7, Pitcherianum (Williams' variety) £5, a fine plant of vexillarium 5½ guineas, Winnianum 4, and Lathamianum and Io 2 each. Selenipedium × grande atratum fetched 3 guineas.

Among miscellaneous genera we note that Sobralia macrantha Kienastiana realised 21 guineas, S. × Veitchii 14, and plants of S. xantholeuca from 4½ to 6 each: Cymbidium × eburneo-Lowianum 20, C. × Winnianum 18, C. Lowianum concolor 5½; Phaius bicolor Oweniæ 8½, P. × Owenianus 6, and P. × Cooksoni 5½, Trichopilia suavis alba 7; Miltonia vexillaria

leucoglossa 6½, and M. × Bluntii Lubbersiana 4; plants of Lycaste Skinneri alba and Cœlogyne cristata alba 3 to 5 each; Oncidium lamelligerum and Platyclinis filiforme 2 each. Nor must we omit a plant of Cœlogyne pandurata which realised £3 10s., and three of Eulophiella Elisabethæ, in flower, which ranged from fifteen to thirty shillings each. *Argus* please note!

The above are necessarily the choicer varieties, in which, as is well known, the collection was rich. Most of the commoner varieties realised ordinary prices.

CYPRIPEDIUM BELLATULUM ALBUM.

An albino of the beautiful Cypripedium bellatulum is undoubtedly a surprise, but such a form has flowered in the collection of Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), and deservedly received a First-class Certificate from the Royal Horticultural Society on June 11th last. It is almost the only pure white Cypripedium in the genus, for C. niveum has usually a few purple spots, while the present one has only a little yellow in the centre of the staminode. The scape, bract, and ovary are entirely green, and every trace of purple has also vanished from the leaves. Indeed, to the latter circumstance we owe our knowledge of the plant at the present moment. Its discovery is due to Mr. R. Moore, Assistant Commissioner of the Shan States, to whom we are also indebted for C. Charlesworthii. Mr. Moore noticed a plant like C. bellatulum, but without any purple in the leaves, and thinking it must be new brought it into his compound. He did not, however, see the flower, for just as it was about to expand a goat got into the compound, and unfortunately nibbled it off. The clump was divided into several plants, which were mostly distributed by Messrs. Charlesworth & Co. It appears to have a very good constitution, and the flower is of the usual size. It is light yellow on first expanding, but soon becomes pure white. It is a most beautiful acquisition.

R. A. R.

DENDROBIUM AUGUSTÆ-VICTORIÆ.

The above species was included in the list of novelties at page 107 of our last volume, having been described by Dr. Kränzlin (*Gartenflora*, 1894, p. 115). Having now seen it on two different occasions, we find it identical with D. veratrifolium, Lindl. It is a very beautiful Dendrobium, and was described over half-a-century ago, though its introduction to cultivation only dates from 1889. Its history is given at page 207 of our last volume. Messrs. F. Sander & Co. received a Cultural Commendation for a fine plant at a meeting of the R. H. S. on April 23rd last.

GRAMMATOPHYLLUM RUMPHIANUM.

Some little uncertainty has been felt about the correct names of one or two fine Grammatophyllums which have appeared in cultivation during the last few years. One of these obtained the garden name of G. Seegerianum, but soon proved to be the above species, described many years ago by Miquel (*Ann. Mus. Bot.*, iv. p. 219, tt. 8, 9). It was known to Rumphius something like a century-and-a-half ago, and was originally found in the Moluccas. Two fine plants are now flowering at Kew, bearing long racemes of 48 and 50 flowers respectively. One is labelled "Kuhdah, Borneo," which indicates its habitat. The other is Grammatophyllum Guilielmi II. (Kränzlin in *Gartenflora*, 1884, p. 115), which proves to be the old G. Rumphianum. It is a noble species, and its long racemes of large greenish yellow flower with large purple-brown blotches are very effective.

R. A. R.

CATTLEYA WARSCEWICZII SANDERÆ.

At the meeting of the Royal Horticultural Society held on June 11th, a superb group of five plants of the above splendid Cattleya was exhibited by Mr. James Hamilton, gardener to Hamar Bass, Esq., Byrkley, Burton-on-Trent, and received both a Silver Banksian Medal and a First-class Certificate. All five came from the source, being purchased with seven others at one of Messrs. Sander's sales at Protheroe & Morris' Rooms, in 1890. The flowers are large and perfect in form, also very richly coloured, the lip being massive and the two eyes in the throat bright yellow. It is one of the best developed forms of the species which we have seen, with segments rather shorter and broader than in the type, though we have previously met one or two other similar forms.

RENANTHERA IMSCHOOTIANA.

Another plant of the brilliant crimson Renanthera Imschootiana has appeared, this time in the collection of E. H. Woodall, Esq., St. Nicholas House, Scarborough, who exhibited it at the Royal Horticultural Society's meeting on June 11th, when it received an Award of Merit. It originally flowered in the collection of M. A. Van Imschoot, of Mont-St-Amand, Gand., in 1891, in which year it was described (Rolfe in *Kew Bulletin*, p. 200). It has the brilliant colour of the well-known Renanthera coccinea, with the great advantage of a dwarf habit. In fact, both plants have flowered when under a foot high, so that it should become popular when better known. It is a native of Burma, and appeared in one of Messrs. F. Sander & Co.'s importations. The former plant bore a raceme of seven flowers, but Mr. Woodall's has twice that number. It should be grown like a dwarf Vanda.

CYPRIPEDIUM × LITTLEANUM.

THE occurrence of another natural hybrid Cypripedium is an event of unusual interest, owing to their undoubted rarity. Hitherto only two examples have appeared, namely, C. × Calceolus × macranthum, from the birch forests of Siberia, and C. × siamense, of which full particulars were given at page 20 of the present volume. The new example has flowered in the collection of H. Little, Esq., of The Barons, Twickenham, having been purchased by him, with others, as an imported plant. On flowering it was immediately seen to be something very distinct, and consequently Mr. Little took a photograph of it, which is here reproduced. It was

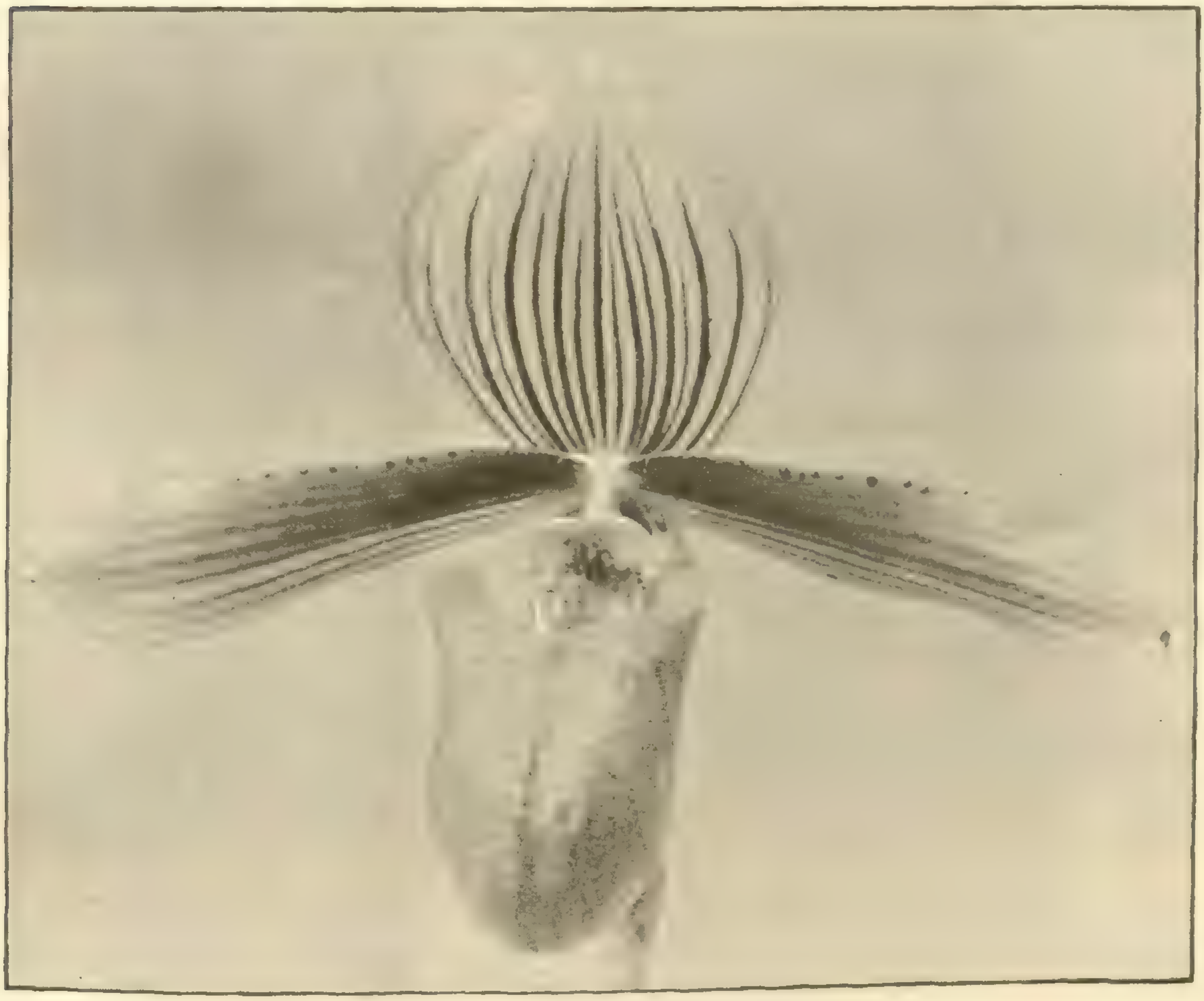

Fig. 8.—CYPRIPEDIUM × LITTLEANUM.

obtained from Mr. H. A. Tracy, of Twickenham, but unfortunately there seems to be a little uncertainty about its exact habitat. Some plants of C. tonsum are said to have come home at the same time: but there are one or two circumstances which lead one to look elsewhere for its parentage, as will presently be explained. The foliage is remarkably like that of C. Lawrenceanum, and out of flower it would almost pass for that species. The chief difference is that the leaves are a little more erect, and the markings rather less in extent. The

flower also shows the influence of the same species, in the broad dorsal sepal and the nearly horizontal petals, as well as in the shape of the lip and staminode. These characters are invariably seen in hybrids derived from C. Lawrenceanum, and thus they afford a clue to the origin of the present hybrid, and at the same time indicate Borneo as the natural habitat; for C. Lawrenceanum is not known from elsewhere. The other parent is not so obvious from an examination of the hybrid, but two or three circumstances lead me to believe it was C. Dayanum. The first character which struck me on seeing the plant, even before I knew anything of its history, was the resemblance it bore to a large form of C. × Swanianum, an artificial hybrid from C. Dayanum ♀ and C. barbatum ♂, and one derived from the former and C. Lawrenceanum would naturally show such a character. C. Dayanum is the only North Bornean species which would account for the characters of the present hybrid, and as the two facts seem to confirm each other, the obvious inference is that it is a natural hybrid between C. Lawrenceanum and C. Dayanum, which are both North Bornean, and in some locality may grow intermixed. I tried hard to utilise the indication afforded by C. tonsum having come home in the same importation, but without success. If the records are correct, that species is a native of Sumatra, and grows with C. Curtisii. These would give a very different hybrid, and no other species is recorded from Sumatra. Nor is C. tonsum known to occur elsewhere. Again, this species is absolutely destitute of hairs on the petals—in allusion to which its name was given—while C. × Littleanum is as strongly ciliate as C. Lawrenceanum. The character is well-shown in the photograph, but has unfortunately almost been lost in the reproduction. Among the multitude of hybrids raised, I find no record of one between C. Lawrenceanum and C. Dayanum, but it is to be hoped that the cross will now be attempted, in the hope of reproducing the present fine thing. The figure is reduced in size, as the living flower measures $5\frac{1}{2}$ inches from tip to tip of the petals ($5\frac{3}{4}$ inches when flattened out), and the dorsal sepal $1\frac{7}{8}$ inches broad. The colour is lighter than in C. Lawrenceanum. The dorsal sepal is white with green veins, which become slightly purple near the margin, and the petals dull green below the middle, with a few minute spots near the base, and the apex light purple. The upper margin of the latter has a row of small blackish warts, much smaller than in C. Lawrenceanum. The lip is also lighter in colour than in that species. The modification of the dorsal sepal and the broader petals show the influence of the other parent. The petals are not as strongly ciliate as in C. Dayanum (not yet as in C. × Swanianum), but in this respect, as in some others, it takes most after C. Lawrenceanum. It is a large and very striking hybrid, and particularly interesting on account of its origin. The plant bore two flowers.

R. A. Rolfe.

CALENDAR OF OPERATIONS FOR JULY.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE general management and treatment recommended for the month of May should still be continued, and it is unnecessary to repeat the details here. There may, of course, be instances where a slight departure from the general rule is advisable; but this is a matter that must be left to the intelligence of the cultivator, who alone is in a position to judge of its desirability. To draw a hard and fast line, and follow it year by year, regardless of all changes—climatic and otherwise—is not what I should consider good practice. Theory is very good in its way, but it must go hand in hand with practice in order to secure the best results. Everyone is liable to have failures with some of his plants, before the road to success is found out; and failures are our most efficient instructors. They incite us to further experiments, and these, coupled with careful observation of results, often lead to complete success.

I have already in previous Calendars given general instructions on watering, damping down, ventilating, shading, &c., and think I have detailed the culture of all the more popular genera of Orchids; and it will therefore probably interest some of our readers if I say a few words upon the work that will most likely be going on here during the month of July. I believe professional men are generally charged with failing to enter into details, and this, at all events, I wish to avoid.

THE CATTLEYA HOUSE.—This house is damped down three times daily if bright and dry; twice if wet or cloudy. Air is admitted pretty freely, but the top ventilators are closed at night, unless the weather is very warm; the bottom ones are closed more or less. The blinds are rolled down from about 9 a.m. to 4 p.m. on all bright days. If the weather is dull we do not keep the blinds down, but contrive to allow the plants as much sun as possible without scorching. For instance, when it is cloudy and sunny alternately, the blinds will probably be up the greater part of the day, only being let down when it is seen that the sun will be bright for a longer spell. Warmth in the pipes is only used when the nights are very cold. Cattleyas Mossiæ, Mendelii, Schroderæ, Skinneri, and probably Lælia purpurata, will be repotted or top-dressed before the end of the month. Cattleya labiata, being growing vigorously, will be given a good light position; and C. Warscewiczii (gigas), likewise being growing strongly, will have the brightest part reserved for them. Lælio-cattleya × Arnoldiana is now in flower, and, like Lælia purpurata, one of its parents, will soon commence to make its new growth. Cypripedium niveum, C. concolor, C. bellatulum, and C. Godefroyæ have been removed to a light shelf in this department, and are showing evident signs that they appreciate it. The plants of Sobralia macrantha got too large for this house, and were turned out into the

corridor, which is kept at a warm greenhouse temperature, where they grow equally as freely, and have made for the past few weeks a good show of bloom. If repotting is required, we do it this month. Before a shift is necessary the pot should become pretty full of roots, when it may be given a larger sized pot, giving it a similar compost, and potting it in the same manner as you would a chrysanthemum. Sobralias are frequently difficult to establish, but when this is once done, they give but little trouble. Our plants of Cattleya Rex, C. Lawrenceana, C. Dowiana aurea, and C. intermedia are grown in a house having a trifle more warmth than the other Cattleyas. The last-named should be repotted this month, as should also C. Lawrenceana, if not already done. The beautiful C. × Parthenia, C. × calummata, and C. × Brymeriana should likewise have attention in this respect without any delay. C. × Chamberlainiana seems to have rather a weak constitution, probably inherited from its parent, C. Dowiana aurea. Our plant occupies a favourite position on a shelf, and is gradually, though slowly, growing more robust.

THE EAST INDIAN HOUSE, containing such plants as the warm Cypripediums, Saccolabiums, Aërides, Angræcums, Miltonias Rœzlii and Warscewiczii, Phaius tuberculosus, Pescatoreas, Phalænopsis, &c., is not given quite so much light as the Cattleya house, nor ventilated so freely, but is damped down quite as often. Most of the resurfaceing and repotting has likewise been done here. A good deal of work and attention is, however, still necessary to keep everything clean and free from parasites.

THE SHOW HOUSE is, perhaps, of more real service during the summer than at any other time of year. A suitable temperature is maintained to keep the blooms fresh and free from spots, which is caused by dampness: but the temperature is not kept so dry as to injure the health of the plants in any way. It is mostly during the night that the delicate flowers become spoiled. Frequently during the summer, when the nights are warm, fire-heat in the growing houses is dispensed with, with great advantage to the plants; but at this time flowers are often disfigured and rendered useless. In the Show house a little warmth in the pipes is therefore maintained, and a very little is sufficient to prevent spotting. A charming effect is produced by arranging the plants in such a house with Adiantum cuneatum, and the flowers will remain perfect until required for cutting. This house, too, is rather more heavily shaded.

THE COOL HOUSE is simply kept as cold as possible, both day and night, the thermometer not being consulted. Much moisture is distributed on the floors, stages, and elsewhere. I think very little indeed is gained by syringing the plants over-head, and therefore rarely practice it, unless the weather is very dry and parching. The atmosphere may, and should be, kept as saturated with moisture as the abundance of air which should continually be on will admit of. If there are not enough ventilators in this

house, take out a small pane of glass here and there. This department has been quite gay with the bright Cochlioda Nœtzliana, Epidendrum vitellinum, and Masdevallias Veitchiana, ignea, and Harryana. Their bright vivid colours are relieved by the white and more sober tints of the Odonto-glossums, while the beautiful bright-yellow Oncidiums Marshallianum and concolor lend the finishing touch of loveliness. Why the Masdevallias are so little grown and cared for puzzles me more than a little. What a fine show a house of them makes at this season! In what species can we find such a lovely variation of splendidly-brilliant colours as can be had with a selection of Masdevallia Harryana and its allies? Masdevallias are of most easy culture, and should be kept as cool as possible during the summer, but during the winter an intermediate temperature suits them better than the Cool house. They like enough water at the roots, but avoid too much, as they are easily over-watered. This month will see us busy overhauling the plants in this department, and repotting any that require it and are in the right condition, cleaning the plants, washing the pots, &c., and leaving them in good growing order, for the time is now coming when Cool Orchids grow apace. I like to do what repotting is required early—that is to say, before the growing season is past, for if left until late in the season the plants fail to become re-established before the winter weather sets in.

THE MEXICAN HOUSE.—We found it necessary to shade occasionally during a few bright days in the spring of the year, but the foliage is now hardened and quite capable of withstanding the full glare of the sun without scorching. The shading is therefore now discontinued, and consequently an abundance of air is needed, and damping down is performed not less than three times daily. About four o'clock in the afternoon the top ventilators are closed, and the bottom ones partially so, the plants at the same time being well syringed overhead. Here again but little repotting remains to be done, but plenty of work is found in keeping the plants free from insect pests. The true Lælia × Gouldiana will now be starting, and if not already rebasketed, should be done at once. It is far preferable to Lælia autumnalis. It lasts in bloom twice as long and is, though steady, a sure grower. Ours grow best in baskets suspended close to the glass. If it is desirable to increase the stock—and the danger of having too many young plants of good things to grow on is remote—they may be propagated by cutting the rhizome clean through at about the fourth or fifth pseudobulb from the leading one, when a back growth will appear. Any rare Cattleya or Lælia, if healthy, may be propagated in this manner. The Lælia anceps and other short bulbed Mexican Lælias are growing apace, and must now receive plenty of water, as, being fully exposed and having so much air, they soon get dry.

THE INTERMEDIATE HOUSE is kept more shaded, and consequently a little cooler, than the Cattleya house at the present season. Odontoglossum

grande is in full growth, and must not suffer for want of water. O. Schlieperianum is in flower, and will soon commence to grow. Another good thing belonging to this group is also flowering, and puts the latter quite in the shade. It is Odontoglossum Williamsianum, and, I think, is rather uncommon in cultivation. It bears a large and many-flowered spike of large and well-shaped flowers, and may probably be a natural hybrid between O. grande and O. Schlieperianum. Would that it were more plentiful. Plants of O. citrosmum are also growing fast, and those that were potted last year are finding the advantage this. We must expect those that have recently been disturbed to make smaller pseudobulbs the same year, and this remark applies to many other Orchids. If Ada aurantiaca, Cymbidiums, &c., require repotting, they should be done at once. Former experiences with Odontoglossum cirrhosum gave what seemed to me direct proof that the Intermediate house was the best place for it, and since then I have always grown it there. Last year, however, I placed a small plant in the coolest house for another trial, and, strange to say, it has grown, if not better, equally as well. Towards the end of this month will see our stock of Miltonia vexillaria done. They always grow best and are less liable to sudden collapse if kept in rather small pots. Water very carefully after repotting. Dendrobium amœnum, D. Falconeri, and D. cymbidioides are grown in this house. The first-named is now in bloom, the flowers being small but sweetly delicate and pretty. All the Cœlogynes greatly appreciate being very near the glass, so as to get plenty of light. C. cristata delights to be in the sun, and being now growing strongly, is assisted by waterings of weak liquid manure. Lycaste Skinneri is also assisted by the same means. This last-named species is easily injured by getting it too wet at the roots; even when growing great care should be exercised.

THE DENDROBIUM HOUSE is now continually kept very warm and moist, and everything is done that will assist in promoting free, healthy, and strong growth. We meet with fair success with most species, but when compared with those grown in Cheltenham we are obliged to take a back seat. I notice in the D. nobile section this year a greater tendency for the foliage to become marked with black spots than they have ever done before. I can attribute this to nothing else but the severe winter through which we have passed, preceded by a dull and comparatively sunless summer. It would be interesting to know if this spot is general elsewhere; and should these lines meet the eye of Mr. James Cypher, of Cheltenham, he would oblige many readers, as well as myself, if he would kindly say if it is so with him. The Calanthes are now getting nicely rooted, and may receive a little weak liquid cow-dung manure. Keep a sharp look out for red spider in this house. Roll up the blinds about 4 o'clock, thoroughly damping down at the same time. During cool nights employ a little artificial warmth. Some of the Thunias will, by this time, have finished

flowering, and may be given plenty of air and sunshine. Dendrobium Wardianum, too, when the growth is completed, should instantly be taken to another house and given the same kind of treatment, or it will quickly start to grow again. Do not, however, withhold a good supply of water just yet.

I am extremely sorry to learn that the much to be dreaded Cattleya fly is still giving trouble in various collections. Doubtless it is imported from time to time with the plants. Give me thrip, aphides, scale, snails, or anything, but spare me from that Isosoma Orchidearum, for in a house of choice Cattleyas it is the worst enemy possible. A correspondent calls it a *beast*, a name somewhat appropriate. Its existence may be detected when the new growth is from an inch to two inches high. This becomes abnormally thick at the base, and one inexperienced would think that a splendid large pseudobulb would result. The growth, however, makes little progress, and gradually tapers off in a more pointed manner than is usual with those not affected. The only method is to cut off the infected growth and destroy it. It is as well to be on the alert when buying plants. Should they be newly-imported ones look well into them, and search for crippled growth or imperfectly formed pseudobulbs. If the fly was the cause of the mischief there will be somewhere about a hole whence it escaped on coming to maturity. Exercise equal caution when buying established plants.

CYPRIPEDIUM × CORNDEANII.

Some additional facts come to hand respecting this plant, which is recorded at page 187 as a supposed hybrid from Cypripedium Lawrenceanum crossed with Selenipedium × Sedeni, though only the influence of the former was apparent. It is one of the half-dozen plants from the collection of T. W. Swinburne, Esq., Corndean Hall, Cheltenham, alluded to at page 66 of our last volume, and its having now flowered in the manner described has naturally caused considerable disappointment. Mr. Swinburne states that the seedlings were not raised by himself: but purchased at Messrs. Protheroe & Morris' Sale Rooms, and the original label, still in his possession is written on one side—"No 1, Lawenceanum × Sedeni," and on the other "Sown April, 90; seedlings, July, 90." As to whether the record is correct we can offer no opinion without further knowledge of the circumstances, and prefer to again call attention to Mr. Swan's interesting note at page 171 of our last volume, with the appended remarks, and request our readers to send us any new facts bearing on the question. We would also ask our hybridists to make a few careful experiments with the genera Cypripedium and Selenipedium, and send us the results.

EPIDENDRUM STAMFORDIANUM.

We learn that the beautiful specimen of Epidendrum Stamfordianum exhibited by Sir Trevor Lawrence in his group at the Temple Show, as recorded at page 189, was grown in the collection of his neighbour, Edward Nix, Esq., of Transhurst, Dorking, by Mr. C. Payne, to whom the credit of producing such an excellent example of good culture belongs. It is by far the finest specimen of this species we have met with.

ORCHID PORTRAITS.

CATTLEYA GIGAS SANDERÆ.—*Journ. of Hort.*, June 20th, pp. 544, 545, fig. 97.

CATTLEYA MENDELII PRINCESS OF WALES.—*Journ. of Hort.*, May 23, pp. 452, 453, fig. 77.

CATTLEYA MOSSIÆ AMŒNA.—*Lindenia*, t, 470.

CATTLEYA SKINNERI ALBA.—*Gard. Chron.*, June 1, p. 681, fig. 98. A monstrous flower.

CIRRHOPETALUM ROBUSTUM, Rolfe.—*Gard. Chron.*, June 22nd, p. 771, fig. 116.

CYPRIPEDIUM BELLATULUM ALBUM.—*Journ. of Hort.*, June 13, pp. 513, 525, fig. 93.

CYPRIPEDIUM CHAMBERLAINIANUM.—*Journ. of Hort.*, May 23, p. 452, fig. 76.

CYPRIPEDIUM × FELIX FAURE.—*Lindenia*, t., 469.

CYPRIPEDIUM GODEFROYÆ LEUCOCHILUM.—*Gard. Mag.*, May 25th, pp. 306, 310, with fig.

CYPRIPEDIUM × GERTRUDE HOLLINGTON.—*Gard. Chron.*, May 25, p. 644, fig. 90.

CYPRIPEDIUM STONEI PLATYTÆNIUM.—*Gard. Chron.*, May 25, p. 645, fig. 91.

DENDROBIUM HILDEBRANDII, Rolfe.—*Gard. Mag.*, June 8, pp. 342, 343, with fig.

DENDROBIUM WARDIANUM, BARON SCHRÖDER'S VARIETY.—*Journ. of Hort.*, May 23, p. 454, fig. 78.

EPIDENDRUM STAMFORDIANUM.—*Gard. Chron.*, May 25, p. 655, fig. 95.

HABENARIA BONATEA, Rchb. f.—*Gard. Chron.*, June 15, pp. 742, 743, fig. 112.

MASDEVALLIA LUDIBUNDA, Rchb. f.—*Lindenia*, t. 472, fig. 2.

MASDEVALLIA × SHUTTRYANA.—*Gard. Mag.*, June 8, p. 341, with fig.

MASDEVALLIA TRIANGULARIS, Lindl.—*Lindenia*, t. 472, fig. 1.

MILTONIA × BLEUANA VIRGINALIS.—*Journ. of Hort.*, May 30, pp. 476, 477, fig., 83; *Gard. Mag.*, May 25, p. 305, with fig.

ODONTOGLOSSUM CRISPUM XANTHOTES.—*Journ of Hort.*, May 23, p. 445, fig. 74.

ODONTOGLOSSUM PESCATOREI LA PERFECTION.—*Gard. Mag.*, June 15, p. 358, with fig.

ODONTOGLOSSUM PESCATOREI LEUCOXANTHUM.—*Gard. Chron.*, May 25, p. 661, fig. 97.

ODONTOGLOSSUM × RUCKERIANUM SPLENDENS.—*Journ of Hort.*, May 23, p. 455, fig 79.

PHAIUS × COOKSONIÆ.—*Journ of Hort.*, June 13, p. 513, fig. 92: *Gard. Mag.*, June 15, p. 353, with fig.

ZYGOPETALUM WENDLANDIANUM, Rchb. f.—*Lindenia*, t. 471.

THE MANCHESTER SHOW.

THE Annual Whitsuntide Show of the Royal Botanical and Horticultural Society of Manchester, was held at the Old Trafford Gardens on May 31st and four following days, when the display of Orchids was above the average, and generally considered as the best which the Society has brought together. The exhibits staged not for competition, mostly by the trade, were very extensive, and contained a large number of striking forms of well-known species, as well as several recent introductions and rarities of great merit. The competitive classes, as usual, attracted a good deal of interest, and the prizes were awarded as follows :—

For the best miscellaneous collection of Orchids in bloom, limited to amateurs, the first prize was taken by E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), who staged a large and brilliant group of well-grown specimens. It contained some fine Cattleyas and Lælias, including several beautiful white forms of C. Mossiæ, C. superba Ashworthii, a very pretty form allied to C. s. alba but with very light blush flowers, and C. × calummata, some fine masses of Dendrobium Bensoniæ, D. Dearei and others, some brilliant Masdevallias, Miltonia vexillaria, Epidendrum radicans, and various other fine things. The second prize went to F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), with another very fine group, including a large Dendrobium infundibulum, the new D. Hildebrandii, Sobralia macrantha Kienastiana, a richly-coloured Lælia purpurata Hardyana, L. tenebrosa, some fine Anguloa Ruckeri, Cattleya Lawrenceana, some good Odontoglossum crispum, and many other elegant things.

In the corresponding class for nurserymen, Mr. James Cypher, Cheltenham, was first, with a fine group, containing some magnificent varieties of Lælia purpurata grown in the best possible manner, plants of Miltonia vexillaria, Dendrobium Phalænopsis, Epidendrum radicans, E. × O'Brien-

ianum, and other good things. The second prize also went to Cheltenham, being secured by Messrs. Heath & Son, whose group contained a fine series of Odontoglossum citrosmum, the best lot of Phalænopsis in the Show, Sobralia macrantha Kienastiana, Aërides crassifolium, &c. Mr. John Robson, The Down, Altrincham, secured the third prize.

For the best collection of Cattleyas and Lælias the first prize was won by T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), with a wonderfully well-grown lot of plants. E. Ashworth, Esq., secured second honours with a fine group in which Cattleyas predominated; while Mr. J. Cypher was third with another good group in which Lælias were equally to the front.

The first prize for the best collection of Cypripediums again fell to W. R. Lee, Esq., Beech Lawn, Audenshaw (gr. Mr. Billington), the group containing the beautiful C. × Winifred Hollington, fine specimens of C. Rothschildianum, C. Stonei, C. × macropterum, Selenipedium × grande, and others, in excellent condition. Fred Hardy, Esq., was second with a large group, noteworthy among them being C. × Gowerii magnificum, Selenipedium × albopurpureum, S. × grande atratum, and others. T. Statter, Esq., was third with a smaller group, including several fine specimens, as C. Stonei, C. philippinense, C. Rothschildianum, Selenipedium Sargentianum, S. caudatum Wallisii, &c. An extra prize was given to E. Ashworth, Esq., for a group too meritorious to be passed over.

For the best collection of Dendrobiums, premier honours were again secured by Mr. J. Cypher, E. Ashworth, Esq., being second, and F. Hardy, Esq., third; all the exhibits being good.

Joseph Broome, Esq., Sunny Hill, Llandudno, presented a Silver Cup, value £10, for the best collection of Odontoglossums in bloom, which was easily secured by W. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), with a magnificent and representative group conta ining some splendid masses of O. nævium, a splendid series of O. crispum varieties, O. Uroskinneri, O. Cervantesii decorum and O. c. roseum, O. sceptrum aureum, a superb form of O. × Humeanum, O. × Ruckerianum, and many other species and hybrids. F. Hardy, Esq., took the second prize with a group containing some good O. crispum, O. nebulosum, O. Pescatorei, O. × Andersonianum, &c. Mr. S. Hinchcliffe, Ashfield, Hale, obtained the third prize.

A Silver Cup was also presented by T. Statter, Esq., for the best ten specimen Orchids (made-up plants excluded), and this was won by E. Ashworth, Esq., with a fine lot, in which Dendrobium pulchellum (Dalhousieanum) D. Phalænopsis, Cattleya superba, Lælia purpurata, and Cymbidium Lowianum were specially meritorious. The second prize went to Messrs. Heath & Son, and the third to Mrs. Hodgkinson, Haigh Lawn, Bowdon.

For the best hybrid Orchid, W. R. Lee, Esq., took the first prize with Lælio-cattleya × Aphrodite (C. Mendelii × L. purpurata), a small plant which will obviously improve greatly as it becomes stronger. E. Ashworth, Esq., was second with Cypripedium × Lawrenceano-Curtisii, and F. Hardy, Esq., third with Cypripedium × œnanthum superbum.

For the best collection of hybrid Cypripediums, T. Statter, Esq., was first with a well-grown collection, and E. Ashworth, Esq., second.

In the groups staged not for competition special mention must be made of a brilliant group of rare species of Orchids and of new plants, with a frontage of eighty feet, staged by Messrs. F. Sander & Co., St. Albans, to which the Society's large Gold Medal was awarded. One of the most remarkable Orchids was a fine specimen of Dendrobium Johnsoniæ, with ten spikes of its beautiful white flowers, to which a First-class Certificate was awarded. Sobralia × Veitchii rosea, S. × Amesiæ, a fine yellow flower tinged with lilac and a rose-coloured lip, and a Miltonia vexillaria called "Memoria G. D. Owen" also received First-class Certificates. Two Odontoglossums called O. prionopetalum album and O. × Roeblingianum, and a Masdevallia called Sander's Red, received Awards of Merit. A very fine Odontoglossum crispum, Sobralia macrantha Kienastiana, Anguloa Ruckeri, and many other fine species and hybrids, might also be enumerated.

Messrs. B. S. Williams & Son, Upper Holloway, staged a fine group, including some fine Cattleyas and Cypripediums, grand plants of Oncidium Marshallianum, the rare Brassia Keiliana, Epidendrum Imperator, a fine E. nemorale, and other Epidendrums, Maxillaria Sanderiana atropurpurea, Calanthe veratrifolia, and other interesting things. Two beautiful things in this group, which received First-class Certificates, were the white Pescatorea Roezlii alba and P. Klabochorum atrorubens, with very dark tips to the segments.

Messrs. Hugh Low & Co., Clapton, also exhibited an excellent group, in which were many fine forms of Cattleya Mossiæ, the striking Cœlogyne pandurata, Lælio-cattleya × Schilleriana, a brilliant form of Cattleya Mendelii, Selenipedium caudatum Wallisii, &c. The beautiful Cypripedium × Gertrude Hollington received a First-class Certificate.

Messrs. Charlesworth & Co., Heaton, Bradford, also staged a very effective group, including some compact forms of Oncidium macranthum, some fine Lælia tenebrosa, Cypripedium Rothschildianum, some very fine C. bellatulum and Lælia purpurata, Cattleya Mossiæ versicolor, whose petals were curiously striped with rose and purple, Odontoglossums, &c.

Messrs. W. L. Lewis & Co., Southgate, exhibited a very pretty group of showy Cattleyas and Lælias, Odontoglossum citrosmum and other showy Odontoglossums, some fine Miltonia vexillaria, and other good things.

Messrs. John Cowan & Co., Garston, Liverpool, also staged a very effective group, including a specimen of Brassia verrucosa, fine specimens

of Cattleya Warneri, Lælia purpurata, Epidendrum vitellinum, Dendrobium crystallinum, and other Dendrobiums, Odontoglossums, &c.

F. C. Jacomb, Esq., Cheam Park, Surrey, sent a fine specimen of Cattleya Mendelii, called "Her Majesty," with numerous splendid flowers, to which a First-class Certificate was given.

W. Thompson, Esq., also contributed an interesting group, containing Cœlogyne Micholitzii, Cattleya Schilleriana, Cochlioda Nœtzliana, Dendrobium formosum giganteum, some good Lælia majalis, &c.

M. Wells, Esq., Broomfield, Sale (gr. Mr. Hinds), sent a small group, mostly Lælias and Cattleyas, including C. Mossiæ Wageneri.

R. Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz), exhibited a very pretty form of Odontoglossum × hebraicum called O. × Poyntzium, with the segments densely spotted with light cinnamon.

A few other plants which received First-class Certificates were Cattleya superba Ashworthii, and C. Mossiæ John Ashworth, from E. Ashworth, Esq.: and Miltonia vexillaria splendens, Lælia purpurata alba, and L. p. Princess May from Mr. J. Cypher. Cattleya Mossiæ Beatrice Ashworth, from E. Ashworth, Esq., received an Award of Merit.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

SELDOM, if ever, at an ordinary meeting of the Royal Horticultural Society has there been such an extensive display as was to be seen at the Drill Hall, James Street, Westminster, on June 11th last, while several striking new or rare forms appeared, including the beautiful Cypripedium bellatulum album from Sir F. Wigan, the remarkable Cirrhopetalum robustum from Messrs. Veitch, the brilliant Renanthera Imschootiana from E. H. Woodall, Esq., Cattleya superba alba from T. Statter, Esq., and several others which will be mentioned in their proper places.

The Silver-gilt Flora Medal offered for the best hybrid Orchid not exhibited previous to January 1st, 1895, was won by Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), with Phaius × Cooksoniæ (P. grandifolius ♀ × P. Humblotii ♂), a most beautiful form, with nankeen-yellow sepals and petals, and a broad undulate lip, bright yellow at the base with purple-brown markings, and clear rose colour in front.

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent the beautiful albino Cypripedium bellatulum album, to which a First-class Certificate was awarded. Awards of Merit were also given to Lælia purpurata Richmond Gem, a form with very large and handsome lip, and a very fine Lælia grandis, called Wigan's variety. He also exhibited Selenipedium × Phædra, Cypripedium × Aylingii, and C. Stonei candidum, the latter without markings on the sepals.

Hamar Bass, Esq., Byrkley, Burton-on-Trent (gr. Mr. Hamilton), sent five well-flowered plants of a beautiful form of Cattleya Warscewiczii, called Sanderæ, to which both a Silver Banksian Medal and a First-class Certificate were given.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), received a First-class Certificate for the rare and beautiful albino, Cattleya superba alba, whose only colour is a little yellow on the disc.

E. H. Woodall, Esq., St. Nicholas House, Scarborough (gr. Mr. Hughes), received an Award of Merit for the brilliant scarlet Renanthera Imschootiana.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), received a Silver Flora Medal for a very fine group, including a very large plant of Lælia purpurata Schrœderæ, with nine spikes and about three dozen flowers, a fine Cattleya Warneri, a specimen of Dendrobium thyrsiflorum, good plants of D. Falconeri, Phaius × Owenianus, Aërides Fieldingii, Oncidium Krameri, &c.

W. M. Appleton, Esq., Tyn-y-Coed, Weston-super-Mare, received a Silver Banksian Medal for a neat group, including eight plants of Cypripedium Godefroyæ leucochilum, C. Chamberlainianum, C. superbiens, C. × superciliare, Anguloa Clowesii, and some good Lælia tenebrosa.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), staged a small group containing several fine things, to which a silver Banksian Medal was given. It contained the Rosefield varieties of Vanda tricolor, Odontoglossum citrosmum and O. crispum, a form of the latter called Pride of Rosefield, fine forms of Cattleya Mendelii and C. Mossiæ, called Mrs. de B. Crawshay, Lælia purpurata Crawshayana, Oncidium Marshallianum Crawshay's Goliath, Odontoglossum crispum Princess May, and Lælia purpurata Russelliana.

Welbore S. Ellis, Esq., Hazelbourne, Dorking, received a Silver Flora Medal for a good group of Odontoglossum crispum, O. sceptrum, a specimen plant of Miltonia vexillaria, the rare Oncidium tetracopis and O. superbiens.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous), staged a very pretty group, to which a Silver Banksian Medal was given. It contained some good Lælia tenebrosa, Anguloa Clowesii, Thunia Marshalliana, Odontoglossum Hallii leucoglossum, Cattleyas, &c.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a very interesting group, including Disa cornuta with a solitary large white flower tipped with blue, to which a Botanical Certificate was given. Cypripedium × Eleanor, which received an Award of Merit, Luisia Amesiana profusely flowered, a fine specimen of Thunia Bensoniæ, Pleurothallis macroblepharis, Bulbophyllum Lobbii, Masdevallia gargantua, M. torta, M. × Stella, M. × Gairiana, Vanda suavis, and others.

J. T. Bennett-Poë, Holmwood, Cheshunt, sent a very finely-grown specimen of Selenipedium caudatum Wallisii with thirteen flowers, to which a Cultural Commendation was given.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), showed a very pretty form of Oncidium cucullatum, Vanda tricolor Cambridge Lodge variety, and a series of Masdevallias, including M. × falcata, M. × Stella, M. calura, and M. Harryana var. Comet: also the following five, to each of which a Botanical Certificate was given:—M. campyloglossa, M. demissa, M. gemmata, M. muscosa, and M. Wageneriana.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), received Botanical Certificates for Oncidium insculptum and Scuticaria Hadwenii. He also sent Dendrobium Loddigesii and a fine Cypripedium Curtisii.

Miss Harris, The Grange, Lamberhurst, Kent, showed Lælio-cattleya × Harrisii, with large blush-white flowers, and the lip yellow at the base and bright crimson in front. The supposed parents are Lælio-cattleya × Schilleriana and C. Mossiæ.

Baron Sir H. Schröder, The Dell, Egham, sent the charming white Sobralia macrantha Kienastiana, a fine Lælio-cattleya × eximia and L.-c. × Canhamiana.

A. Campbell, Esq., Kennishead, Glasgow (gr. Mr. Reid), sent a good form of Odontoglossum Pescatorei.

A. W. Gledstanes, Esq., Manor House, Gunnersbury, showed a well-flowered Cattleya Mossiæ.

W. R. Lee, Esq., Beech Lawn, Audenshaw (gr. Mr. Billington), sent Lælio-cattleya × Aphrodite (C. Mendelii ♀ × L. purpurata ♂), a promising thing, but at present very small.

W. W. Mann, Esq., Bexley (gr. Mr. Simon), sent two good spikes of Grammatophyllum Rumphianum.

Reginald Young, Esq., Sefton Park, Liverpool, sent Cypripedium superbiens and a seedling of doubtful parentage, but apparently a hybrid between C. superbiens and C. Dayanum.

Messrs. James Veitch & Son, Chelsea, exhibited a very fine group, to which a Silver-gilt Flora Medal was awarded. The most remarkable plant it contained was Cirrhopetalum robustum, Rolfe—a New Guinea species described at page 175 of our first volume—to which a First-class Certificate was given. Other striking things were Disa × Veitchii and D. × langleyensis, Angræcum falcatum with eight racemes, the fine Selenipedium × Clonius, a superb Lælio-cattleya Arnoldiana, Dendrobium glomeratum, Cypripedium Lawrenceanum Hyeanum, Cattleya Mossiæ Wageneri, Miltonia vexillaria alba, Masdevallia × Gairiana, Epidendrum xanthinum, E. Wallisii, &c.

Messrs. F. Sander & Co., St. Albans, also received a Silver-gilt Flora

Medal for another brilliant group, which contained a fine specimen of the beautiful Dendrobium Johnsoniæ, Angræcum Fournierianum, Stanhopea Amesiana, Cattleya nobilior, C. Mossiæ Reineckiana, and other fine Cattleyas and Lælias, the rare Odontoglossum Galeottianum, a brilliant form of O. crispum with pure white petals, and sepals spotted with light cinnamon-brown, Sobralia × Veitchii, Anguloa eburnea, some good Epidendrum vitellinum, Aërides falcatum Leoniæ, Masdevallia Roezlii, a fine hybrid Thunia called T. × Veitchiana magnifica (T. Brymeriana ♀ × T. Bensoniæ ♂), Cypripedium × M. A de Lairesse (C. Curtisii ♀ × C. Rothschildianum ♂), C. × Frau Ida Brandt, derived from C. × Io grande ♀ and C. × Youngianum ♂, a fine hybrid which received an Award of Merit, &c.

Messrs. Hugh Low & Co., Upper Clapton, staged a large and effective group, which received a Silver Flora Medal. It contained some fine forms of Cypripedium bellatulum, and C. Curtisii, a richly-coloured Lælio-Cattleya × Ingramii, some good Cattleya Mossiæ, and other showy things.

Messrs. Charlesworth & Co., Heaton, Bradford, were awarded a Silver Banksian Medal for a group of good things, in which Lælia tenebrosa, Oncidium macranthum, Odontoglossum crispum, Cattleya Mossiæ versicolor, and others were conspicuous.

Messrs. W. L. Lewis & Co., Southgate, also received a Silver Banksian Medal for a pretty group of showy Cattleyas, Odontoglossums, Cypripediums, Epidendrum vitellinum, &c. The singular little Sarcanthus Williamsoni and Bifrenaria vitellina each received Botanical Certificates.

A similar award went to Messrs. B. S. Williams & Son, Upper Holloway, for another fine group, in which Pescatorea Lehmanni and P. Roezlii were specially interesting. Aërides Houlletianum, Dendrobium × polyphlebium, and its variety Emericii, Promenæa microptera, Odontoglossum citrosmum roseum, and Cypripedium exul, were also noteworthy.

Mr. T. Ware, Tottenham, exhibited Habenaria dilatata, a white flowered species, which obtained a Botanical Certificate.

M. A. A. Peeters, Brussels, sent a plant of the pretty hybrid Cattleya × Parthenia.

Two fine collections of dried flowers of Orchids were particularly interesting, the colours being very well preserved. They came from Mrs. Chapman, wife of Mr. H. J. Chapman, of Camberwell, and Mr. Onzo Fukuba, of Chelsea, the former receiving a Silver Flora Medal, and the latter a Silver Banksian. The flowers were mounted on cardboard, those from Mrs. Chapman being afterwards varnished to protect them from the air.

An interesting event which took place at this meeting was the presentation of Veitch Memorial Medals to Mr. James Bateman (the venerable

pioneer of modern Orchid growing), to Mr. F. W. Moore (Director of the Royal Botanical Gardens, Glasnevin), and to M. Lemoine, the two former being specially connected with Orchids. Mr. Bateman is the author of the biggest book in the Lindley Library, *The Orchidaceæ of Mexico and Guatemala*, and of a *Monograph of Odontoglossum*, and his work in connection with Orchids is known to everyone. Of Mr. Moore it suffices to say that he has the charge of one of the best public collections in existence, and that he takes a special interest in its welfare, the genus Masdevallia being one of his particular favourites.

CONTINENTAL NOTES.

Among the more interesting plants exhibited at the Ghent Horticultural meeting on June 9th were good forms of Odontoglossum Pescatorei and O. crispum, from Messrs. Janssens & Vincent. O. c. guttatum and a fine Miltonia vexillaria with a dozen large sprays, from Messrs. Vervaet & Co., Lælia tenebrosa with bright coloured lip, and a well-flowered Cypripedium Stonei, from M. Jules Hye-Leysen, and Selenipedium × Sedeni candidulum, with twenty fine flowers, from M. De Smet-Duvivier.

At the sixtieth meeting of the Brussels Orchidéene, also held on June 9th, Messrs. Linden staged a splendid group, consisting largely of Cattleya Mossiæ, C. Mendelii, and Lælia purpurata, to which a Special Diploma of Honour was accorded. A large plant of the latter bore about 100 flowers, and a specimen of Thunia Marshalliana, had a dozen racemes. Acacallis cyanea, Ionopsis paniculata, Comparettia macroplectron, Cirrhopetalum pulchrum, Mormodes pardinum unicolor, Epidendrum Mantinii, and Bulbophyllum anceps were some of the rarities, the latter receiving a Botanical Certificate. Numerous other fine forms, mostly of the usual popular species, from various amateurs received Certificates of Merit.

CORRESPONDENCE, &c.

F. G. S., Bishop Auckland. Cattleya Mendelii abnormal. You will find full particulars of similar cases at page 251 of the last volume. As yours has only flowered once, and then only a single flower, we cannot say if the deformity is permanent, though we fear that it is. If it is constitutional there is no remedy, and this time will prove. Your flower has the lip missing, and the lateral sepals united in one.

D. M., Dorking. Catasetum macrocarpum.

H. J. R., Florence. Odontoglossum of section Myanthium, not yet identified. O. cristatellum is very different.

W. S. A good well-grown Lælia tenebrosa. There are many of these dark varieties, which, in fact, are the typical form.

R. B. W. Odontoglossum crispum, unspotted form, and a large and very pretty rosy variety, probably that called O. c. roseum. A white O. × Andersonianum.

J. G., H. R., and others. We really do not see how to name these numerous forms of Cattleya Mossiæ and C. Mendelii. Scarcely any two are exactly alike. We do not recognise them as any of the specially named varieties, and some of these are described in the vaguest possible fashion. See note at page 114.

III.] AUGUST, 1895. [No. 32.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

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NOTES.

Two meetings of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, during August, on the 13th and 27th respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock noon.

A small plant of Vanilla planifolia, in the collection of Sir Trevor Lawrence, Bart., at Burford, Dorking, is now bearing over fifty healthy pods, which, in the ordinary course, may be expected to ripen early next year. Mr. White states that for several years he has been trying to obtain this result, though hitherto without success.

A very pretty white and unspotted form of Odontoglossum × Andersonianum has appeared in the collection of R. Brooman White, Esq., of Arddarroch, which may be called O. × A. virginale, in allusion to its chaste colouring. It is very distinct, and came exactly the same last year, so that the character is evidently constant. A very pretty O. crispum roseum, with large light-rose unspotted flowers, also came at the same time.

The last-issued number of the *Lindenia* concludes the tenth volume, and contains a complete index of the plants hitherto figured in the work.

The *Gardeners' Chronicle* for July 6th last contains a list of hybrid Cattleyas and allies, with their parents and raisers, compiled by Mr. H. Chapman, gardener to R. I. Measures, Esq., and brought up to May 1st. The list is fairly complete, but we note several omissions, and a few which

are enumerated under the wrong heading, while Cattleya velutina and C. Batalinii should certainly not be included among natural hybrids. A final revision would have much increased its usefulness.

A two-flowered raceme of Galeandra Devoniana, the finest of the genus, comes from the collection of John W. Arkle, Esq., Holly Mount, West Derby, Liverpool. It was sent from the Rio Negro district, Brazil, and has flowered both last year and this. Mr. Arkle's experience with it, however, is like that of most people, namely, that it does not seem to thrive very well, and we should be glad to hear if any correspondent has succeeded in overcoming this difficulty. It requires warm treatment, and should evidently be grown with Cattleya superba and C. Eldorado, with which it is sometimes imported. Schomburgk speaks of the stems as sometimes from five to six feet high.

A rather pretty form of Cattleya intermedia comes from the collection of R. H. Measures, Esq., The Woodlands, Streatham, with blush-white flowers, and the front lobe of the lip stained with light rosy purple. It approaches the variety pallida, but we are not sure if it is one of the named varieties.

Three two-flowered racemes of the pretty little Cypripedium niveum, all borne by the same plant, have been sent by O. O. Wrigley, Esq., Bridge Hall, Bury. Whether this indicates more than strength on the part of the plant is uncertain, but Mr. Wrigley has been informed that Messrs. Hugh Low & Co. have had seven double-flowered racemes from the same importation, and one raceme bearing three blooms. A well-marked flower of C. Godefroyæ leucochilum is also enclosed.

A very pretty form of Odontoglossum crispum comes from R. le Doux, Esq., Marlfield, West Derby, Liverpool, in which the sepals and petals are white, but the lip strongly marked with cinnamon on the sides and front of the yellow disc, giving it a very striking appearance. We have seen a similar form before, and it may be one of the legion of named varieties.

The remarkable Cycnoches Rossianum has again flowered in the collection of H. J. Ross, Esq., of Florence, producing a very long pendulous raceme, over a yard long, with seventeen male flowers, which are not inaptly likened to a lot of monkeys running up a rope. A few years ago it may be remembered that this plant, which is believed to be the only one in cultivation, also produced the very different female flower.

Mr. Ross also alludes to the effect of the great earthquake of May 18th last on his collection of Orchids. The houses presented an extraordinary spectacle, hundreds of pots having been thrown down, the pathways being

covered with them, and many fell into the cisterns beneath. Three days sufficed to clear away the wreckage, and repot the plants, when, fortunately, it was found that the material damage was not great. The damage to property generally was enormous.

An error crept into our account of the Selwood Sale, with respect to Lælia × Oweniæ, which at page 205 is said to have fetched eleven guineas. Mr. Statter writes to say that he purchased it for thirty guineas, and that Mr. Owen gave over hundred guineas for it originally. It is now producing a very strong growth, from which a fine inflorescence is expected.

Mr. Statter also states that his plants of Cattleya Dowiana aurea, some twenty in number, are simply superb, every one of them flowering. They grow like weeds. Some notes of Mr. Statter's method of treatment, and his success with this genus, were given at page 291 of our last volume.

The hybrid Disas, which were mentioned in our last volume, have again made a great show in the Kew collection, and the house has been gay for weeks with their brilliant flowers. They seem to grow and flower with the utmost freedom.

LÆLIO-CATTLEYA × SCHILLERIANA DELICATA.

A very distinct and beautiful variety of Lælio-cattleya × Schilleriana has appeared in the collection of R. H. Measures, Esq., The Woodlands, Streatham, of which we have received the three-flowered inflorescence. The lip is nearly entire, and the colour blush-white, with the veins on the front lobe of the lip very light rosy purple, and a small oblong blotch of rather darker shade in the centre, just in front of the sulphur-white disc. This delicate veining of the lip, together with the crisped margin, is very beautiful, and sets off the blush-white of the rest of the flower very effectively. The pollen-masses are eight, but four are very small, as in all the hybrids between Cattleya and Lælia. On the whole it takes most after the Cattleya intermedia parent, except that the lip is nearly entire, and the petals broader, in which respect it approaches Lælia purpurata, the other parent. It is also rather smaller than most of the forms of Lælio-cattleya × Schilleriana, which more often resemble the Lælia parent in size, and in the large amount of purple in the front of the lip. It is most allied to L.-c. × S. leucotata *(supra*, ii., p. 237), in which, however, the front lobe of the lip is not veined with light rosy-purple, as in the present one, which is a very distinct and beautiful addition to the group.

DIES ORCHIDIANÆ.

A CORRESPONDENT alludes to the "variety question," which he thinks ought to be taken seriously in hand. I quite agree with his remarks, and will attempt to deal with one or two of the points raised. First, "What is Cattleya Mossiæ Wagner's variety? Is it C. Mossiæ Wageneri? And, if so, is the new name any improvement? If the latter be conceded, why not Lælia pumila Day's variety, and Cattleya guttata Leopold's variety, and Prinz's variety, and Lælio-cattleya × elegans Mrs. Wolstenholm's variety?" Ah! I see my correspondent has been looking at the List of Hybrid Cattleyas, and I must admit his questions are posers. I give it up. But I have previously alluded to similar cases, and could quickly lay hands on dozens of others. For example, Reinecke's variety of Cattleya Mossiæ, Blunt's variety of C. Mendelii, or Provost Russell's variety of C. Trianæ. Are they improvements on C. Mossiæ Reineckeana, C. Mendelii Bluntii, and C. Trianæ Russelliana? If so, why not carry the improvement a little further, and say Reinecke's variety of Mrs. Moss's Cattleya? &c., &c. Fancy reading of the white variety of the lipped Cattleya, or the sulphur variety of the whitish Lælia! And why not the noble Dendrobium, the distinguished Cypripedium, or the crisped Odontoglossum? Probably everybody would know what was meant. They are merely translations into the vernacular, and if the thing is good in itself, why not carry it out a little further? But then, one can have too much of a good thing, and I should imagine that a little of this would go a long way.

The next question is worse. "What is the difference," it runs, "between Cattleya Mossiæ Mr. Smith's variety, C. M. Mrs. De Brown, C. M. J. L. Jones, and C. M. Miss Flora Mary Robinson?" (I have altered the names for obvious reasons.) It appears that all have been recently exhibited and recorded in the gardening papers, though the descriptions given hardly enable one to identify them. For example, one was very fine, another of exceptional colour, a third exquisitely shaped, while of the fourth the name only is recorded. And, to crown all, the *Orchid Review* did not even record the names. It is certainly a little hard on my correspondent, but I regret to say that I cannot help him out of the difficulty. It must be left for the writer of the next monograph. "The varieties of Cattleya Mossiæ, and how to distinguish them," would be a very taking title, and, if judiciously managed, the work might be compressed into the space of a couple of volumes or so, with others to follow.

My enterprising correspondent has a stock of these queries on hand, and now only sends a few by way of sample. The two remaining ones are less profound, and can soon be dismissed. It appears that on two or three

recent occasions Sobralia macrantha alba has been exhibited, and recorded in the gardening papers, but the *Orchid Review* always calls it Sobralia macrantha Kienastiana. "Why is this?" This is obviously a question for the editorial department, though, so far as the facts are concerned, the matter is easily explained. Seven years ago the late Prof. Reichenbach described the white form of this species as S. macrantha Kienastiana, and our Editor, who, I believe, objects to several names for the same thing, evidently thinks it right to preserve it. But the former, you say, is so appropriate. What of that? Was not Dendrobium transparens album appropriate? Yet it re-appeared as D. transparens Souvenir d'Alec. And are the names Cymbidium Lowianum viride and C. L. Mandaianum more appropriate than C. L. concolor? No! Appropriateness is not a strong point in modern Orchid nomenclature—at all events, so far as varieties are concerned.

And now for the last question. "Can a variety originate by good culture alone?" Of course not, you say; the boy who weeds the garden can tell you that. But wait a minute! There is a hybrid Dendrobium of which a stock was raised by propagation from the original plant, and the other day one of these propagated pieces was not only exhibited as a distinct variety, but also certificated as such; and, of course, a record was kept for the benefit of future historians. It was well cultivated, of course, but how can it be distinguished as a variety? My advice is, don't try to distinguish it.

The fact is, this question of varietal names is a difficult one. Such names are absolutely necessary for horticultural purposes, in order to distinguish our plants. But they should be used as a means to this end only, and according to fixed principles. They should be short and concise, and as descriptive as possible. That is to say, if the character can in any way be indicated by the name, it should be done, though in other cases complimentary names might be used. When a new name is given, a little pains should be taken to ascertain if the variety has already received one, and its characters should invariably be recorded, so as to give others an opportunity of recognising it should they happen to possess it. And, above all, an unnecessary multiplicity of names should be avoided. As to their form, I think they should be latinised, so as to conform to the generic and specific name. Were these rules carefully carried out, varietal names would be of real service, instead of meaningless jargon, as too many of them are at present.

As to one of the points mentioned above, a few more words must be said. Some people, I know, wish to see varieties named in the vernacular,

or, as they say, like florists' flowers. But they lose sight of the fact that the two cases are not at all parallel. In the case of florists' flowers it is unnecessary to use the specific name, but this cannot be said of Orchids (or, indeed, other plants), of which many species are grown. I suppose our Cattleyas *could* be named like florists' flowers; but is it desirable that they should be? On the contrary, it is a great convenience, both for cultural and other purposes, to be able to group them under their specific heads, as Mossiæ, Trianæ, &c. The varietal name might be in the vernacular, it is true, but what is the advantage? Cattleya Mossiæ Wageneri is far better in every respect than C. Mossiæ Wagener's variety, or Herr Wagener, or any other variation of the man's name, or his residence, that could be invented; and C. Mossiæ alba would have been better still if it had been first applied. And don't forget that question, "Shall we ever have a universal language?" The vernacular system opens the door to every language under the sun, and under it anything like a uniform system is absolutely impossible. Fully half the confusion we have at present is directly due to its partial adoption.

One little example, and I have done. Opening my *Gardeners' Chronicle* the other day, I stumbled across a note of some plants exhibited at Ghent on June 9th last, and found that a Certificate of Merit was given to "Odontoglossum crispum var. Janssens and Vincent," and three lines lower down that "Odontoglossum Pescatorei Janssens and Vincent" also received a similar award. I am now looking out for further developments. Fancy Cattleya labiata var. F. Sander & Co., Lælia purpurata L'Horticulture Internationale, or Dendrobium nobile Victoria and Paradise Nursery variety! Truly the possibilities of the vernacular system are endless.

ARGUS.

ONCIDIUM × HÆMATOCHILUM.

As supplementing the note at page 174 on the above, Mr. Patter writes that Oncidium luridum is found throughout the island of Trinidad, while O. Lanceanum occurs in only one district, and there alone the hybrid is found. The seedling plant previously mentioned is very promising, and Mr. Patter hopes to see the flowers next year or the year after. He has also repeated the cross between the two species in question, and the capsules are swelling; while with O. Lanceanum crossed with O. × hæmatochilum and the reversed cross he has been equally successful. The latter he is watching with much interest, because the seed parent is a hybrid, though he sees no reason why a hybrid should not be fertile. Among Cypripediums, at all events, there are numerous examples of hybrids which are fertile, and we are inclined to think that sterility is not nearly as common as was formerly supposed.

NOTES ON THE GENUS LEPTOTES.

We have received some flowers of the pretty little Leptotes bicolor from W. E. Ledger, Esq., Wilton Road, Wimbledon, and have much pleasure in acting on his suggestion to give a few notes on the genus, which is still very imperfectly known.

Leptoties bicolor, Lindl. (*Bot. Reg.*, xix., t. 1625), the original species of the genus, flowered in the collection of Mrs. Arnold Harrison, of Aigburth, near Liverpool, in 1833, having been sent from the Organ Mountains by her brother, about the previous year. The generic name, Leptotes, was given in allusion to its slender leaves, the plant resembling a small Brassavola in habit. The flowers appear at the base of the leaves, either singly or in racemes of two to four flowers, the sepals and petals being white, and the lip purple, with a white apex and margin, and the small basal auricles light green. The species is said to have an extensive range in Southern Brazil.

It is a very pretty little plant, and succeeds well in shallow pans or in teak baskets, which should be suspended near the roof, either in the Intermediate or the Cool house, and not too heavily shaded. During the growing season they should be liberally watered. Under these conditions they grow well and bloom very freely, the flowers lasting for several weeks. The plants take up very little room, and, when well-grown, are very effective.

According to E. Morren, who twice succeeded in fertilising the flowers, the ripe fruits are fragrant, with a perfume something like that of the Tonquin bean, and may be infused in cream or milk and used in ices, giving them a mild and agreeable flavour, sweeter but less penetrating than Vanilla. By the way, has anyone tried to hybridize it with Sophronitis? The two are sufficiently allied to render the experiment worth making, and, if successful, the result might be interesting.

L. bicolor var. brevis, Rolfe (*Gard. Chron.*, 1892, i., p. 42), is a distinct form which appeared with Messrs. B. S. Williams & Son, of Upper Holloway. The segments are shorter and broader than usual, and there are only a pair of faint purple streaks near the base of the lip, the flower being normal in other respects.

A very curious flower of L. bicolor appeared at Kew in 1883, in which one petal was completely metamorphosed into a lip, both in shape and colour, while the other petal was also partially changed, the column being very small. A figure appears in *Gard. Chron.*, 1883, ii., p. 20, fig. 5.

Liptotes serrulata, Lindl. (*Sert. Orch.*, t. 11), was described from a drawing made by Descourtilz, showing much larger flowers, with the basal auricles decidedly serrulate, and the lip only striped with purple, the leaves also being stouter. Descourtilz states that it grows on the Upper Macahé and Ilha Grande, on trunks of Cedrela trees, surviving the conflagrations

which occur. No specimens are known agreeing with the figure, which we suspect is an exaggeration.

L. bicolor var. glaucophylla, Hook (*Bot. Mag.*, t. 4734), which was sent to Woburn from the Organ Mountains by Gardner, and flowered in 1839, and L. glaucophylla Hoffmnsg. (*Bot. Zeit.*, i., p. 833), are very similar in the colour of the flower, and probably represent L. serrulata, which is scarcely more than a variety of L. bicolor.

L. TENUIS, Rchb. f. (*Hamb. Gartenz.*, xxi., p. 296), flowered in the collection of J. Day, Esq., of Tottenham, in 1865. It was sent from Brazil to Messrs. Hugh Low & Co. by Blunt. The sepals and petals are described as yellowish, and the lip white with a dark violet blotch, but it is doubtful if it is more than a variety of L. bicolor.

L. UNICOLOR, Rodr. (*Gen. et. Sp. Orch.* nov., i., p. 74), is a pretty little species not yet in cultivation, in which the segments of the flower are uniformly pale pink, the racemes being two-flowered and pendulous.

L. PARANENSIS, Rodr. (l. c., ii., p. 163), has solitary flowers, and a narrower, more acute lip than the preceding, which it otherwise much resembles. It also is not in cultivation.

L. MINUTA Rolfe (*Gard. Chron.*, 1889, ii., p. 223), is a remarkable little species about two inches high, which appeared with Messrs. James Veitch & Sons. The flowers are correspondingly small, white with the exception of a rosy purple disc to the front lobe of the lip, and solitary. It is probably Brazilian, like the rest of the genus.

It would be very interesting if someone would get together all the forms of this singular little genus and cultivate them side by side, and thus prove how far one or two of the above are really distinct. The difficulty would be how to obtain several of them.

CATTLEYA WARSCEWICZII SATURATA.

The peculiarity of this remarkable and very handsome variety is that the front lobe of the lip is so completely saturated with dark amethyst-purple as to obliterate the yellow eyes in the throat, so characteristic of the species. It flowered with Messrs. James Backhouse & Son, of York, in June, 1892. The sepals and petals are also bright rosy-lilac of a shade rather darker than usual. A similar form was exhibited at the Royal Horticultural Society's meeting on June 25th, from the collection of Lord Rothschild, at Tring Park, and received an Award of Merit. Whether it is from the same source or otherwise we have no information, but at all events it has the same peculiarity, which is aptly described by the above varietal name. It is analagous with C. Trianæ Arkleana (*supra*, p. 103), each representing the extreme limit of variation in the depth and richness of colour of their respective species, in both cases the yellow blotches being obliterated.

CYCNOCHES EGERTONIANUM.

A VERY interesting circumstance enables the history of this mysterious plant to be completed, namely, the production of a raceme of female flowers in the Kew collection. Last autumn a living plant of some species

Fig. 9. CATTLEYA A HOUSE AT HIGHBURY. (*See pp. 211, 212*).

of Cycnoches was received from Mr. Richard Pfau, of Costa Rica, and in the following spring a young growth appeared at the top of the old pseudo-bulb, which was taken off and potted, and the two plants grown on side by side. In April last one of them produced a long pendulous raceme, with

fifteen of the well-known purple male flowers of Cycnoches Egertonianum, and soon afterwards the other plant was seen to be showing for flower. As the raceme progressed a difference was noticeable, and as the buds developed it became evident that they belonged to the other sex. Early in June the flowers expanded, and a matter which has long been doubtful can now be set at rest. This raceme was very short, and bore only two flowers, about four times as large as the males, very fleshy in texture, and entirely green. The lip was ovate and quite entire, and the column very short and stout, with well-developed fleshy wings. In short, so utterly diverse in appearance were the two, that one can understand the incredulity of a former generation in believing it possible that they could be produced by the same plant. Sixty years ago the above facts would have been treated as romance.

The species was figured and described by Mr. Bateman in 1842, and now that the question can be cleared up it may be interesting to repeat its history in the author's own words:—"Among Mr. Skinner's earliest Guatemalan collections attention was particulary directed to the specimens of a plant, which to the habit of a Cycnoches joined the long pendulous stems of a Gongora, and for the possession of which, in a living state, no small anxiety was entertained. Some plants were speedily transmitted by Mr. Skinner, but these, on flowering, proved to be merely the old C. ventricosum. A mistake was of course suspected, and Mr. Skinner, being again applied to, sent over a fresh supply of plants, for the authenticity of which he vouched; but these were scarcely settled in the stove when flowers of C. ventricosum were again produced. Mr. Skinner being importuned for the third time, and being then on the point of returning to this country, determined to take one of the plants under his special protection during the voyage, which, flowering on the passage, seemed to preclude the possibility of further confusion or disappointment. The specimens produced at sea were exhibited, and the plant itself placed in the stove at Knypersley, where it commenced growing with the utmost vigour. The season of flowering soon arrived, but brought with it a recurrence of the former scene of astonishment and vexation, for the blossoms, instead of those of the coveted novelty, were not distinguishable from the old C. ventricosum. These were still hanging to the stem when the inexplicable plant sent forth a spike of a totally different character, and which was, in fact, precisely similar to the specimens gathered in Guatemala, and to those produced on the voyage. It is, at present, impossible to attempt any explanation of so strange a phenomenon, especially on the supposition that the two forms of flower are analagous to the male and female blossoms of other tribes, for C. ventricosum alone not infrequently perfects seeds. The species (if as such it may be regarded) was named in honour of Sir Philip Egerton, before any of its eccentricities had been discovered, otherwise the compliment might

have been deemed a dubious one."—*Batem. Orch. Mex. & Guat.*, t. 40.

The two forms, or what were intended as such, are represented on the plate in question, but before discussing them further another very interesting circumstance must be mentioned. In September, 1843, Lindley received from R. S. Holford, Esq., of Westonbirt, near Tetbury, Gloucestershire, a flower-spike of what he called "Cycnoches ventricosum and C. Egertonianum intermixed on the same raceme." It was exhibited at a meeting of the Horticultural Society, and was afterwards figured (*Bot. Reg.*, xxix., *Misc.*, pp. 75, 77). The raceme bore five flowers, one being the green female form, two others the purple male form, and the remaining two curiously intermediate, the perianth being mottled with green and purple, though in structure they were essentially males. Singularly enough, the raceme is drawn as erect, instead of pendulous, though all the flowers are in their proper positions—that is with the lip uppermost. A possible explanation is that the raceme may have been tied to a stick, in which case the flowers would naturally right themselves. Unfortunately, Lindley did not preserve the raceme. The plant had been purchased from Messrs. Rollisons, of Tooting, as C. ventricosum.

From the above facts it might be inferred that the female of Cycnoches Egertonianum is well known. In fact, it has often been stated, first that C. Egertonianum and C. ventricosum were sports of the same species, and afterwards, when the separation of the sexes became known, that they were the males and females respectively. Indeed, the circumstances detailed by Bateman, and a glance at the plate in question, seemed to preclude the possibility of any other explanation. And yet there is the difficulty that the flowers on the plate, which should be females, have the long and slender column of the males. It was evident that, as in the case of the "third sex" of Catasetum, some mistake had been made, for no other species produced males of two different kinds. Again, the "sports"—as they were then called—figured by Bateman and Lindley, were very different, but, unfortunately, neither of the specimens had been preserved, or an explanation might have been possible. Sports of C. ventricosum, however, had been dried, and these were females, while typical C. ventricosum was of the other sex. One flower of C. Egertonianum figured by Lindley is also female, though not quite perfect, and Bateman's alone remained anomalous. The only possible explanation seemed to be that the flowers of "the old C. ventricosum," which "were still hanging to the stem," may have been somewhat withered before the flowers of true C. Egertonianum expanded, and were restored by the artist with the help of a previous drawing. The character of the raceme and the shape of the sepals and petals fairly represent the female, but the column is that of the male. These facts were recorded three years ago (*Gard. Chron.*, 1892, i., pp. 204, 205), and it is satisfactory to find them now confirmed by plants at Kew. Mr. Bateman,

to whom I wrote, remembered the circumstance perfectly, and the commotion it caused, but cannot remember exactly how the drawing was made, though with regard to all the circumstances he is inclined to concur in the above explanations.

Whatever the explanation may be, the fact remains that C. ventricosum and C. Egertonianum, which were so long confused together, are very distinct species, and belong to different sections of the genus. C. ventricosum belongs to the first section—technically known as Eucycnoches—in which the lip is ovate, very fleshy, and immoveable in both sexes, its allies being C. Loddigesii, C. chlorochilon, and C. Haagei (the latter probably including C. versicolor). C. Egertonianum belongs to the section Heteranthæ, in which the two sexes are very diverse, the female agreeing with the preceding section, but the lip of the male reduced to a small disc with radiating teeth, and attached to a slender hinge so as to move up and down. Its allies are C. Warscewiczii, C. Rossianum, C. pentadactylon, C. maculatum, C. aureum, C. peruvianum, and one or two imperfectly-known ones. Of the four first mentioned in each section, both sexes are now known, and in due time the history of the genus may be completed.

R. A. Rolfe.

CATTLEYA MENDELII ABNORMAL.

A large and beautiful form of Cattleya Mendelii has been sent by G. Wood, Esq., Brandon, Suffolk, in which the two halves of the lip are not alike, one side of the disc having nearly lost the yellow suffusion, and the characteristic reddish purple lines being reduced to two, and situated close to the pale centre line. Immediately on the other side of the centre a bright purple line extends right to the apex, and there expands into a small purple auricle, which is very curious. On this side the disc is normal in character, the rest of the lip being blush-white. In other respects the flower is normal, the colour being blush-white, and the petals 4 inches long by 2½ inches broad. We rather suspect that it may have come out of an importation to which we have previously called attention (see p. 224, also vol. ii., p. 251), in which every plant is said to show the same tendency to abnormal development, in some cases only two or three of the segments being present. A curious example of the same was shown by Mr. Chapman, gardener to R. I. Measures, Esq., of Camberwell, at the Royal Horticultural Society's meeting on July 9th, in which one flower had the lip curiously flaked with irregular stripes of white and rosy purple, the other flower on the same raceme being normal. This is said to have been the first perfect flower produced by the plant since it arrived, about a dozen others which have previously appeared all being abnormal in some way or other, and some of them very imperfect. Thus the plant seems to be in a sportive condition. It is said to have come out of the importation

above named. We should like to know if the present plant shows any such character at a future time of flowering. We have been asked on two or three occasions what can be the cause of this peculiarity, and whether it is likely to prove permanent. As to the former point we cannot offer any suggestion. We have been told that the plants were collected off some cultivated orange trees, where presumably the seeds may have been sown, though we do not see how the deformity can be attributed to the trees on which the plants grew. The peculiarity seems to be constitutional, and we fear will not be eliminated by cultivation. We would suggest that possibly the seeds may have been produced by a plant in abnormal condition, and the peculiarity may have been reproduced in the offspring generally. We should be glad if anyone can suggest any other explanation, or give any further particulars of the importation in question, as it would be interesting to know more of its history.

LYCOMORIUM SQUALIDUM.

This extremely rare Orchid has again appeared in cultivation, in the collection of G. Marshall, Esq., Claremont House, Grimsby, and a raceme was exhibited at the Royal Horticultural Society's meeting on July 9th last. It was originally discovered by Pöppig in 1829, at Pampayaco, in Peru, and was described and figured as Anguloa squalida (*Pöpp. et Endl. Nov. Gen et Sp.*, i., p. 43, t. 74). In 1852 Reichenbach established for it a new genus under the above name (*Bot. Zeit.*, x., p. 833), and afterwards figured it (*Xen. Orch.*, i., p. 181, t. 64). Warscewicz afterwards collected it at the sources of the Marañon River, in Peru, and his specimens were named by Lindley Peristeria fuscata, and sold as such at Steven's Rooms, but on flowering they proved identical with the preceding. Its history is thus given by Lindley :—"It is in the rich collection of the Lord Bishop of Winchester that this fine plant has at last flowered. Plants of it were sold by Stevens in May, 1853, along with others from M. Warscewicz, and thence transferred to the care of Mr. Lawrence at Farnham Castle, who exhibited the specimen before us, at the late exhibition of the Royal Botanic Society in the Regent's Park. The judges there, not seeming to know anything about the species, gave it a small Silver Medal, although it is certainly the best novelty of the present season, in either a botanical or horticultural point of view" (*Gard. Chron.*, 1856, p. 388). The plant has the general habit of a Peristeria or Acineta, with pendulous racemes of six to twelve, or according to Warscewicz's Sale Catalogue, as many as twenty, fleshy flowers, with a powerful aromatic fragrance. They are dull purple-brown outside, and spotted with purple-crimson inside. The lip has a saccate base, two large oblong side lobes directed backwards towards the column, and a small fleshy almost callus-like front lobe. The anther has a curious

terminal appendage, which is concave underneath, and seems to be specially provided for the protection of the gland of the pollinia. Nothing of this kind is found in Peristeria. The re-appearance of the plant after so long an interval is very interesting. Mr. Marshall's plant has probably not yet reached its normal development.

R. A. R.

CYPRIPEDIUM KIMBALLIANUM.

A fine Cypripedium is figured under the above name in a recent issue of the *Gardeners' Chronicle* (June 29, pp. 800, 801, fig. 125), where the note appears that it is "supposed to be a hybrid between C. Rothschildianum and C. Dayanum"—a *natural* hybrid being intended. It will therefore be interesting to complete the history of the plant. It is in reality C. præstans, Rchb. f. (*Gard. Chron.*, 1886, ii. p. 776), a New Guinea species introduced by Messrs. Linden. It was afterwards figured in *Lindenia* (vi., t. 249) as variety Kimballianum, and ultimately became C. Kimballianum, through the omission of the specific name. When Cypripedium Rothschildianum was introduced by Messrs. Sander it was recorded as a native of New Guinea, and Messrs. Linden immediately stated that it was identical with C. neoguineense, which they had previously introduced. A flower from a plant purchased as one of the latter was afterwards submitted to us, and was certainly C. præstans, as was also one of C. Kimballianum from another source. It has also been re-described as C. Gardineri, Guillemard, and confused with C. glanduliferum, Blume, another New Guinea species not in cultivation. The next thing is that C. Rothschildianum is not from New Guinea at all, but from Borneo. It is not a little curious that a New Guinea species should have to do duty as a natural hybrid between two Bornean ones, but after the above confusion one is prepared for almost anything, and the least we can do is to thus attempt to put matters straight.

DENDROBIUM × RHODOPTERYGIUM.

Information respecting the above rare Dendrobium has come to hand very slowly, but its hybrid origin is now fully established. It was found by Mr. Boxall, in Moulmein, in 1874, and sent to Messrs. Hugh Low & Co., being described by Reichenbach in the following year as a species (*Gard. Chron.*, 1875, i., p. 684). Twelve years later D. × polyphlebium was described (l.c., 1887, i., p. 702). It flowered in the collection of E. G. Wrigley, Esq., Howick House, Preston, who had obtained it from the Liverpool Horticultural Co. as a natural hybrid. Reichenbach thought the guess a good one, and suggested D. Pierardii and D. rhodopterygium as

the parents, remarking that he now suspected that D. rhodopterygium might be a mule. Shortly afterwards the same author described D. × polyphlebium var. Emericii (l.c., 1887, ii., p. 242), remarking that the stem was intermediate between D. Pierardii and D. Parishii. An examination of materials of these three forms from Major-Gen. E. S. Berkeley, Spetchley, Bitterne Park, Southampton, proves that all are forms of the same hybrid, D. Pierardii and D. Parishii being evidently the parents. D. × rhodopterygium has erect stems, which are smooth, as in D. Pierardii, which the flowers also much resemble in shape. The sepals and petals are light purple, and the lip a little deeper, nerved with purple, and with only a trace of the dark blotches of D. Parishii. The variety polyphlebium has pendulous stems, which are loosely sheathed, as in D. Parishii. The segments are rather broader and darker than in the type, and the lip shorter and more open, with a sulphur margin and suffused blotches. The variety Emericii has almost the shape of the latter with the colour of the former, the pale marginal band of the lip, however, being much broader. The rhubarb scent of D. Parishii can be traced in each, but especially in the latter. Major-Gen. Berkeley found the hybrid on four different occasions growing with D. Pierardii, and a few other plants are in cultivation which have appeared with the parent species. The characters of the two are so distinctly combined as to leave no doubt of the origin of this interesting Dendrobium.

R. A. R.

ODONTOGLOSSUM GALEOTTIANUM.

A plant of this rare and distinct species has just bloomed in the collection of H. J. Hunter, Esq., of Edinburgh, of which a flower has been sent. It is pure white, with the exception of the light yellow crest, on which are a number of deeper yellow lines, and a little brownish spot at the base of each petal. Another character by which it may readily be distinguished from every other, is the linear arms or teeth of the column. The few plants in cultivation have mostly appeared as single individuals in importations of O. Cervantesii, and Reichenbach suggested that it might be a natural hybrid, in which, however, we do not agree. It bears no close resemblance to the species just named, nor is there any other known which would account for the peculiar arms of the column. We therefore believe it to be a true species, which for some reason has never become common in cultivation. On the whole it seems most allied to O. apterum (nebulosum) though quite distinct in the character just pointed out. Its history was given at page 215 of our first volume.

CYPRIPEDIUM HYBRIDIZATION.

With respect to the interesting question raised at page 201, as to whether the influence of one parent of a hybrid may not sometimes be almost, if not quite, obliterated in the offspring, a case has occurred in the collection of C. Winn, Esq., The Uplands, Selly Hill, Birmingham, which it may be interesting to record. Mr. Winn crossed a flower of Cypripedium venustum with the pollen of C. concolor, and a batch of seedlings was the result. In due time they reached the flowering stage, but to his disappointment every plant proved to be poor forms of C. venustum. What may be the explanation of this we cannot say, but the facts were given to us by Mr. Winn himself, and to some extent they confirm Mr. Young's experience with C. barbatum and C. niveum. Then there is the curious case of C. × Corndeanii mentioned at p. 215. Perhaps others of our readers may have had similar experiences, in which case it would be interesting to place them on record.

CORYANTHES MACULATA VAR. VITRINA.

A remarkable variety of the above variable species has flowered with Messrs. F. Sander & Co., of St. Albans, in which the markings have entirely vanished, and thus it may be considered as an albino of the species, It was imported from Central America. The sepals and petals are light greenish-yellow, the hood and column a little paler yellow, and the lip a semi-transparent shade of very pale yellow, with a slight dash of palest green. There is an almost glassy appearance about the flower, which renders the above name very appropriate. R. A. R.

DENDROBIUM SPECIOSISSIMUM.

It is interesting to note that this remarkable species, whose history was given at page 119, has now flowered in cultivation. A small plant, bearing one about half-developed flower, was exhibited by Messrs. F. Sander & Co. at the Royal Horticultural Society's meeting on July 9th, and received a Botanical Certificate. On July 23rd it was again exhibited, both by this firm and also by Messrs. Hugh Low & Co., and being in better condition received an Award of Merit. The flowers are white, and bear a considerable resemblance to those of D. formosum, though they are quite different in the large rounded front lobe of the lip, and in the markings inside the spur. There is a broad yellow line on the disc, which becomes rosy-red behind, while the base of the spur inside is yellow, margined all round with a rich crimson line where it joins the white. It has not, however, yet attained its normal development, and if it proves at all amenable to cultivation we may hope to see it hereafter in something like its true character.

NOTICE OF BOOK.

The Amateur Orchid Cultivator's Guide Book. By H. A. Burberry, F.R.H.S. Second edition, 8vo., pp. 172, with four coloured plates and numerous illustrations. Blake and Mackenzie, Liverpool, 1895.

Fig. 10.—SHOW HOUSE AT HIGHBURY.

A little over a year ago we had occasion to notice the appearance of a very useful little work under the above title, and the first edition of two thousand copies being exhausted a second has now been prepared, a copy of which is before us. The work is thoroughly familiar to most of our readers, and therefore it will be sufficient to say that the second edition has

been considerably enlarged and revised throughout, while several additional illustrations are given, and four lithographic coloured plates, each showing a group of the more popular kinds, some forty-three in all. Another addition deserving mention is a table of instructions under various heads, such as temperature, situation, potting, watering, and time of growth and flowering, and as the species are alphabetically arranged in the left-hand column, it is extremely handy for reference. Eleven pages at the end are devoted to Questions and Answers, and will repay careful perusal. As regards nomenclature we note that a few defects of the former edition have been remedied, and altogether the value of the work as it appears in its new dress is considerably enhanced, and will doubtless be welcomed accordingly. A few of the additional illustrations will be familiar to our readers, having already appeared in these pages, and the others have also been prepared by the half-tone photographic process. Two of them represent scenes in the collection of the Right Hon. J. Chamberlain, M.P., over which Mr. Burberry so ably presides, and these, by the kindness of the publishers, we are able to reproduce (pp. 233, 241). We have no doubt that this useful work will prove an invaluable guide to the numerous amateurs and others who are engaged in the cultivation of these charming plants.

HABENARIA RHODOCHILA.

This charming little species almost rivals the brilliant Habenaria militaris, as the colour of its large and gracefully four-lobed lip is a beautiful scarlet—or sometimes orange-scarlet—which is very effective. And, fortunately, it is equally amenable to cultivation, for there are several pans in the Cool house at Kew which are growing and flowering with almost native luxuriance. It is a native of Southern China, and was originally found growing in shade near the North River, Canton, and afterwards on the Lo-fau-shan Mountains. It is said to grow on rocks in a thin layer of rich vegetable mould, and from its habitat will require less heat than H. militaris, though, with this exception, we believe that the treatment detailed at page 83 of our first volume for the latter will also serve for H. rhodochila. It grows from about eight inches to a foot high, and bears four to six lanceolate leaves near the base, the scape terminating in a raceme of six to twelve flowers, the lip being as above described, and the sepals and petals light green. These, however, are very small in proportion to the lip. The species is very happily named, and forms a very charming addition to the number of terrestrial Orchids in cultivation. There is a variety in which the colour of the lip is light cinnabar-orange, for which the name var. cinnabarina is very appropriate.

THE HYBRIDIST.

DENDROBIUM × ILLUSTRE.

The flowering of this handsome hybrid is a very interesting event in the annals of Orchid hybridization, as the experiments which have hitherto been made with the yellow-flowered species allied to Dendrobium fimbriatum have not been attended with much success. D. × illustre was raised by Messrs. James Veitch & Sons, of Chelsea, from D. chrysotoxum ♀ and D. pulchellum (Dalhousieanum) ♂, and received a First-class Certificate from the Royal Horticultural Society on June 25th last. It well combines the characters of the two parent species, as the influence of D. chrysotoxum is seen in the clavate stems and fleshy leaves, while that of the pollen parent may be traced in the pale lines on the leaf-sheaths, as well as in the flowers, which are fairly intermediate in character, both in shape and colour. The sepals and petals are light yellow inclining to buff, and the lip a little brighter, with the nerves across the middle suffused with maroon. The raceme bore only two flowers, which indicates very clearly that it is not yet full developed, as both the parents produce long racemes. It is an extremely interesting cross, and a very promising acquisition. We have received one of the flowers from Messrs. Veitch.

LÆLIO-CATTLEYA × C. G. ROEBLING.

A very beautiful hybrid derived from Lælia purpurata ♀ and Cattleya Gaskelliana ♂ was exhibited by Messrs. F. Sander & Co., at the Royal Horticultural Society's meeting on June 25th, under the above name, and received a First-class Certificate. It combines well the characters of the two parents, being about intermediate in shape, though approaching the Cattleya parent in its broad segments. The flower is blush-white, with the front lobe of the lip very rich amethyst-purple and a clear white margin, which sets it off to great advantage. The tube is light yellow pencilled with narrow purple lines. A flower of this fine hybrid has been kindly sent by Messrs. Sander, and proves to be very pleasantly fragrant.

CATTLEYA × MISS MEASURES.

Under this name Messrs. F. Sander & Co. exhibited a striking and distinct Cattleya at the meeting of the Royal Horticultural Society on July 9th last. It was derived from C. Lueddemanniana ♀ and C. velutina ♂, and showed abundant evidence of its descent. The pseudobulbs are rather short, and the majority two-leaved, though one or two of the older ones have only a single leaf. The flower most resembles the pollen parent in shape, except that it is larger and the segments broader. The sepals and petals are of a peculiar shade, approaching dull rosy lilac with a suffusion of yellowish-salmon colour; the side lobes of the lip rosy pink, and the front lobe rosy lilac with purple veins, while the disc is deep yellow, veined

with reddish behind. It is very promising, and likely to develop into a good thing when the plant becomes strong.

Lælio-cattleya × D. S. Brown.

At the Royal Horticultural Society's meeting on July 9th, an Award of Merit was given to the above handsome hybrid, which has been raised by Messrs. F. Sander & Co., between Cattleya Trianæ ♀ and Lælio-cattleya × Schilleriana ♂. In shape it most resembles the former, but the petals are narrower, and rosy-purple in colour, with a rich purple crimson, nearly entire lip. The pseudobulbs are mostly two-leaved. It is very handsome, and approaches L.-c. × Arnoldiana in colour, though the flowers are rather smaller.

ORCHIDS IN NEW YORK CITY.

The Orchid collection of Hicks Arnold, Esq., which is one of the oldest collections in America, contains many valuable and unique specimens, which, when in bloom, are worth a long journey for any Orchid lover to see. Considering the difficulties which the gardener, Mr. James Morris, has to contend with, the plants are grown remarkably well, the Cattleyas and Cypripediums especially. There are only two greenhouses on the place, in which all varieties are grown successfully, with the exception of Masdevalllas and Columbian Odontoglossums. During my recent visit I found a great many rarities in bloom; and of Cattleyas and Lælias the following rare kinds were at their best:—

Cattleya intermedia alba, a splendid plant, with eight large flowers; two C. Mossiæ alba, each with five blooms; C. M. Reineckiana, and several plants of C. M. Wageneri. The finest variety of C. Mossiæ Hardyana which I have ever seen was in full bloom, the flowers measuring nine inches across the petals, the lip very large and much fringed, and the blotching on the sepals and petals very deep coloured. Cattleya Gaskelliana alba, with four blooms, and another good form of this species, were both in their glory. Two splendid specimens of Lælio-cattleya × Arnoldiana, each with five flowers, also showed very prominently. One of the very finest forms of L.-c. × elegans had a fine spike with six large blooms, and several others were flowering, among them two L.-c. × Schillierana, L.-c. × S. Stelzneriana, and others.

Cypripediums are Mr. Arnold's favourites, and most of the latest and rarest varieties are here represented. Among those which I found in bloom were the unique plant of C. × Greyanum unicolor, which is very distinct from the type by its very yellowish-green appearance, it was carrying two flowers, C. × Fraseri, which is the only plant in America, was also flowering; and among many others may be mentioned C. × luridum and

a very fine C. niveum; also Selenipedium × Brownii and S. × Mrs. W. A. Roebling.

Among miscellaneous Orchids may be mentioned two fine specimens of Oncidium sphacelatum, Odontoglossum citrosmum album and roseum, Epidendrum × O'Brienianum, and Lycaste Skinneri.

I may as well mention that the celebrated specimen of Cattleya Mendelii Quorn House variety can be found in this collection, showing eight fine flower sheaths.

J. A. MANDA, JUN.

S. Orange, N.J.

CYPRIPEDIUM × NANDII.

I frequently observe confusion as to the seed and pollen parents of various Orchids in notes concerning them in the different papers, which is rather unfortunate. In a description of Cypripedium × Nandii, which appeared in the *Gardeners' Magazine* of July 6th, 1895, the following passage occurs:—"The beautiful Cypripedium Nandii, of which I send you a photograph, is a secondary hybrid raised from a cross between C. callosum and C. × Tautzianum, the last-named of the two parents having been raised from C. barbatum, fertilised with the pollen of C. niveum. In C. Nandii there are traces of the three species that have been instrumental in its production. In the habit, the markings of the foliage, and in the flowers C. niveum greatly predominates, which is all the more remarkable considering that it was only the pollen parent of C. × Tautzianum." Curiously enough, the writer of these remarks, in his list of hybrid Cypripediums published in the *Gardeners' Chronicle*, gives C. niveum as the seed parent, and this, I believe, is correct, for according to the list of "Orchids Certified by the Royal Horticultural Society, 1859 to 1893," it received a First-class Certificate on Jan. 10th, 1887, as C. niveum ♀ × C. barbatum ♂. C. niveum is given as the seed parent in the *Manual of Orchidaceous Plants*, published by Messrs. Veitch & Sons; and as C. × Tautzianum was raised by Mr. Seden in their establishment, this parentage should be reliable. See also the *Orchid Review*, vol. I., p. 132, where the symbols ♀ and ♂ are used, and so prevent the possibility of mistake.

REGINALD YOUNG.

[We believe that the records are correct, and that C. niveum was the seed parent of C. × Tautzianum. It was probably a slip of the memory on Mr. Chapman's part to call it the pollen parent, though of course it is none the less confusing. But there are many other cases where the records are contradictory, and in some cases it is impossible to correct them with any degree of certainty, which is unfortunate.—ED.]

CALENDAR OF OPERATIONS FOR AUGUST.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

IN no department here is any perceptible change discernible at present, either as regards the temperatures or general management. To carry out the treatment recommended in the few preceding Calendars is the very best advice I can tender in the present one.

Often have I spoken of tree leaves (English oak preferable), half decayed, as a valuable agent for the cultivation of Orchids, firstly because a medium is afforded from which moisture evaporates regularly, and secondly because that moisture is impregnated with a natural manurial stimulant which cannot fail to be most invigorating to plant life. I like to put the leaves about in moderately thin layers (say two or three inches deep), in places which dry up very quickly owing to some cause, such as an underground passage of hot-water pipes, &c., and by placing them above the pipes as described more fully in the Calendar for January last.

My object in bringing this matter forward again is to caution readers who may have been induced to try leaves against an error which used to be very common, namely, that of using them in huge, wet, cold and decomposing masses. Decomposition is, of course, always in progress, hence the manurial stimulant, but unless it proceeds in a natural and gentle way fungoid growths appear upon the scene, the spores of which soon fill the air and are not slow to attack such plants as afford suitable ground for their germination and rapid growth, the development of which produces what is known as the Cattleya disease, &c.

Well do I remember an instance in point, some eight years ago (that being about the date when the employment of leaves was strongly urged by several prominent growers), when I hastened to empty the large centre tanks of several Orchid houses of their huge cargo of putrid leaves and water. At this place several of the houses had fine large centre tanks throughout their entire length about four feet deep and built up with bricks and cement. These had been from time to time filled up with leaves, and when I took charge of the collection there was between two and three feet of rotten materials, which, as the tanks were quite water-tight, were very wet and cold, in fact almost swimming in the discoloured stagnant water. It was soon quite evident that this state of affairs was not correct, but was bringing about ruination to the Orchids, particularly the Cattleyas and Lælias. Disease was rapidly taking off the plants, and did not desist until the putrid materials were removed. Care must be taken to avoid this state of things.

Some of the earliest of the Dendrobiums will now be finishing their growth, such as D. crassinode and D. Wardianum, and as soon as this is completed each plant should be gradually removed to a drier atmosphere, such as that of a Peach house or Vinery which is resting. We have yet a good deal to learn about Dendrobium Wardianum, in fact the field for

acquiring cultural knowledge with many other Orchids is still a large one. Fifty years ago Orchid growing was really in its infancy, and many tolerably easy growing species we read dwindled and died a premature death, owing to their simple requirements not then being understood. Now-a-days many of the very kinds that were then thought difficult grow freely enough, because we understand them better, and we can now grow and flower many of the most beautiful year after year, and at the same time increase them in size. But it is not so with D. Wardianum. True one can propagate an immense number of small plants, and so perpetuate its existence in that manner for an indefinite period, but to maintain that beautiful picture of a newly imported plant when growing for the first and second season is quite another matter. That sturdy, vigorous, healthy looking growth they are wonted then to send forth is not lasting, and I am afraid that it never will be so. [Not until its natural conditions can be better imitated.—ED.] Let no new grower be misled, and take too much credit upon himself for his success with newly imported stuff, for there are several other species that are like the foregoing. Dendrobium Maccarthiæ, D. Devonianum, Cattleya citrina, Oncidium Phalænopsis, Vanda cœrulea, and Odontoglossum Londesboroughianum, can be mentioned as being amongst those that are apt to give trouble to keep in healthy free flowering condition, and to increase in size. These, like D. Wardianum, are truly no new species with which we and our predecessors likewise have had no experience. Surely by this time the best artificial treatment should be known, and yet we can boast of no universal success. I acknowledge that it is sometimes recorded of this or that plant doing well in certain places and under certain conditions, which we should at all times endeavour to imitate as nearly as possible, but I have never yet heard of a Vanda cœrulea growing on and on into an immense specimen, like we frequently see Vanda suavis, nor of a Dendrobium Wardianum growing like D. nobile, a plant of which a correspondent tells me he has had for nearly fifty years, and has stocked all his neighbours with propagated plants. No! and I have but little hopes of hearing it. Is it not a fact that Thunia, that good-natured genus which is as hard to kill as a weed, grows in company in its native habitat with Dendrobium Wardianum? In such a case one would think that the treatment for one would suit the other, and that both would prosper and be equally happy. But is it so? The difference must be constitutional, hence my conclusion.

[It does not by any means follow that two plants which inhabit the same district grow under identical conditions. One may be terrestrial, the other epiphytic, as in the examples just mentioned, and identical treatment must necessarily end in failure for one or the other. We firmly believe that every case of failure arises from the essential natural conditions either being misunderstood or imperfectly imitated in our Orchid houses at home.—ED.]

But to proceed. Dendrobium Wardianum having finished its growth should be taken to cooler quarters, and given a long season of rest, as it is thus kept longer in good health. Give the plants the full benefit of sun and air, but be cautious not to discontinue the water at the roots at the same time—nor indeed to any other Orchid—for if this is done shrivelling rapidly follows and a great check is the result. Apply water as usual, and as the new pseudobulbs become more and more hard and matured, the supply of water should be gradually diminished, until by the time the dull weather sets in they are able to endure drought for weeks. Some may have an idea that to withhold water at this early stage will prevent the appearance of a second growth, but such a check is more likely to cause immature growth than otherwise. Where it is advisable to prevent second growth the same year, sole reliance must be placed upon free ventilation and cooler treatment generally after the first growth is completed. Under the most careful and skilful treatment a small percentage of plants are almost sure to start growing again, but on no account should such plants be again placed in a growing temperature with a view to accelerate the completion of a second pseudobulb, as such treatment is unnatural and weakening. The proper way is to go on with the gradual ripening process, and simply ignore the existence of new growth.

The above remarks on watering and resting Orchids apply to most of the Dendrobiums, Cattleyas, Lælias, and others that have a resting season, but there are exceptions. For instance there are a few Dendrobiums in which it is not nearly so important to stop the second growth, unless it is getting late in the season. I refer to D. × Ainsworthii, D. × Leechianum, and similar crosses, which frequently break again from the base of the new growths, long before the latter have finished. Supposing these second growths appear about mid-summer, they have sufficient time before to make up good pseudobulbs, and should be kept growing on for that purpose. But should these growths not appear before say August, it is best then not to encourage them, but gradually harden off the plants in cooler quarters.

Among the Dendrobiums that are bringing their season's growth to a close will be the D. thyrsiflorum section, D. nobile, and the many hybrids of which it is a parent, D. chrysotoxum, &c., and these should be removed. Conditions similar to those which Mexican Orchids enjoy would suit them admirably. Autumn-flowering Dendrobiums should not be removed from the warm house, nor rested in any way until they have bloomed, and even then, in most cases, they should remain in the same house to rest. The list of warm-resting sorts may also be supplemented by some others which flower in spring, as D. Parishii, D. Bensoniæ, D. aggregatum, D. Maccarthiæ, D. albo-sanguineum, and D. superbum. All of these are rather capricious under cultivation, but their eccentricities may generally be mastered in due time if their requirements are studied and good

attention given, providing, of course, that proper houses and conveniences exist in which to grow them. D. cruentum is now in flower, and is quaint and rather pretty, the sepals and petals being greenish white, whilst the lip is prettily marked with a bright chestnut red.

Oncidium longipes, O. Schillerianum, and O. nigratum, are three pretty little species which are also now blooming. They are very free growing and require no exceptional treatment other than to be grown in the Intermediate house. The first-named is best suspended in pans or baskets. O. Schillerianum is noted for the great length of its thin wire-like spikes, which twine together when growing in a tangled mass, and when so is more showy and pretty when in bloom, as the flowers being small would look nothing if not so massed together by nature. O. nigratum is rather effective when the spikes are strong, the colour of the flowers reminding one of a miniature Odontoglossum cirrhosum.

Oncidiums do not like being often disturbed at the roots, and this therefore should not be done without good cause. But when potting is necessary, give good and perfect drainage, and use good fibrous peat and sphagnum moss, taking every precaution that the watering is always carefully done, so that the compost lasts the longest possible time in good condition.

GENERAL REMARKS.—As the power of the sun declines see that the shading is gradually reduced and more air given, so that the plants may become well matured. Air during the autumn months can always be given more freely than at any other season. Go through the plants now, if possible, and sponge them, as this is a time of year when the various species of scale, &c., breed and increase very rapidly, and should be checked, as no plant can grow well if not kept clean. What Cattleya and Lælia potting is required should be done not later than this month. I mean the late summer-blooming kinds like C. Warscewiczii and C. Gaskelliana. If not done this month it is too late, and they are best held over until the following spring.

SPOT ON DENDROBIUM LEAVES.

With respect to the question mentioned at page 214 of Dendrobium leaves being more spotted than usual this season, Mr. James Cypher writes that he has observed the same thing in many collections, and before reading Mr. Burberry's notes had arrived at the same conclusions as to the cause, namely the severe winter preceded by a comparatively dull and sunless summer. Mr. Elwes, of Colesborne, has observed the same thing in his Dendrobiums, and is at a loss how to account for it. It would therefore appear to be pretty general. We cannot suggest any other cause for the mischief, but our knowedge of this disease is still very imperfect.

ORCHID PORTRAITS.

CATASETUM TABULARE, Lindl., VAR. RHINOPHORUM, Rchb. f.—*Gard. Chron.*, July 13, pp. 43, 44, fig. 8.

CATTLEYA LEOPOLD II., L. Lind.—*Lindenia*, t. 479. This is a variety of C. × Hardyana with white sepals and petals, and near C. × Hardyana Statteriana.

CYPRIPEDIUM KIMBALLIANUM.—*Gard. Chron.*, June 29, pp. 800, 801, fig. 125. This is C. præstans, Rchb. f., a New Guinea species.

CYPRIPEDIUM × NANDII.—*Gard. Mag.*, July 6, p. 403, with fig.

DENDROBIUM × ILLUSTRE.—*Journ. of Hort.*, June 27, pp. 561, 566, fig. 99; *Gard. Mag.*, June 29, p. 385, with fig.; *Gard. Chron.*, July 6, p. 15, fig. 4.

DENDROBIUM NOBILE VAR. CANDIDULUM.—*Lindenia*, t. 480.

DISA LONGICORNU, L. fil.—*Gard. Chron.*, June 29th, p. 791, fig. 121.

NEUWIEDIA GRIFFITHII, Rchb. f.—*Bot. Mag.*, t. 7425.

ODONTOGLOSSUM EDWARDII, Rchb. f.—*Lindenia*, t. 476.

ODONTOGLOSSUM × HARVENGTENSE, L. Lind.—*Lindenia*, t. 478. This is a variety of O. × excellens, as pointed out at p. 112 of our last volume.

ODONTOGLOSSUM PULCHELLUM MAJUS.—*Lindenia*, t. 473.

PHAIUS MACULATUS, Lindl.—*Lindenia*, t. 477.

SCHOMBURGKIA ROSEA, Lind.—*Lindenia*, t. 475.

STAUROPSIS GIGANTEA, Benth.—*Lindenia*, t. 474.

ARTIFICIAL HEAT DURING SUMMER.

The question whether it is necessary to employ artificial heat for the warmer growing Orchids during the summer months occasionally crops up, and it would be interesting if some of the principal growers would give us the results of their experience in the matter. I am deeply interested in everything appertaining to the successful culture of Orchids, and have little doubt that there are yet many things to learn respecting the different methods of treatment of which we read so much in the Orchid literature of the present period. I have read on several occasions that some noted cultivators dispense with artifical heat in the hottest houses during the summer months, the time when the majority of Orchids are in full growth, and it would, I think, interest many of your readers beside myself to learn from those who have adopted this method their success or failure. Not having had any practical experience in the matter myself, I can give no definite opinion, but I remember a few years ago an amateur cultivator saying that during hot summer weather he allowed the fires to go out, and only lighted them when the nights were likely to be chilly. At length, however, he came to me greatly concerned about his plants, saying:—"My

Calanthes are all spotting; some disease has attacked them. My plants of Peristeria elata have also become spotted, and the growths have stopped prematurely. The Cattleyas which flowered so well during early summer are fast decaying in the bulbs, and some of them have become quite putrid. Many other plants also are showing signs of going wrong. What can be the cause of it?" I suggested that it might be caused by dispensing with fire heat, combined with too much water at the root and in the atmosphere. If not this, what could it have been?

ORCHID GROWER.

[We take it that our correspondent only alludes to the occupants of the warm house, and it would certainly be interesting to know how far artificial heat may be dispensed with during spells of warm genial weather, for only then could artificial heat be safely dispensed with. A safe guide would perhaps be not to let the temperature fall below a certain minimum in any house, and only to dispense with fire-heat when the outside conditions permit—a rule which would apply equally well to Cool Orchids. But what this minimum may be in the case of the warm house, and how far our variable climate permits of artificial heat being dispensed with, are matters respecting which other correspondents may be able to give us the benefit of their experience.—ED.]

ONCIDIUM TETRACOPIS.

This is a very handsome species of the rambling O. macranthum group, which was exhibited by Welbore S. Ellis, Esq., at the meeting of the Royal Horticultural Society, on June 11th. It is very rare in cultivation, but at least two or three other plants are known. It was described by Reichenbach in 1873 (*Gard. Chron.*, 1873, p. 915) from dried flowers sent from New Granada to Mr. Bull by Senor Baldeviama. Some living plants were also introduced, which ultimately flowered in the collection. It also flowered in the collection of H. R. Mark, Esq., of Beckenham, in 1890. In 1892 it was again discribed as O. chrysodipterum (*Veitch Man. Orch.*, viii. pp. 23, 24, with fig), from a plant which flowered at Chelsea, and which had been acquired at one of the London sales in the previous year. This plant passed into the collection of the Hon. F. L. Ames, at North Easton, Mass., U.S.A. It bears a considerable resemblance to O. superbiens, Rchb.f., but is most allied to O. trifurcatum, Lindl., and O. cryptocopis, Rchb.f., which if now in cultivation, must be exceedingly rare. The latter is figured at t. 5858 of the *Botanical Magazine*. There are quite a number of imperfectly known species in this curious group of Oncidiums, to which Lindley gave the name of Microchila, on account of the small lip.

R. A. R.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

At the meeting of the Royal Horticultural Society held at the Drill Hall, James Street, Westminster, on June 25th, Orchids were not so largely exhibited as on the previous occasion, though several interesting groups and specimens were staged.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), staged a very effective group of good things, to which a Silver Flora Medal was awarded. It contained several forms of Lælia tenebrosa, including a fine specimen with twenty-two flowers, and a dark form called Charlesworth's variety, to which an Award of Merit was given; L. × Stella, two forms of the white Sobralia macrantha Kienastiana, Lælio-Cattleya × Canhamiana alba, L.-c. × eximia, some choice forms of Cattleya Mossiæ and C. Mendelii, Cypripedium Lawrenceanum superbum, C. × Goweri magnificum, Selenipedium × macrochilum giganteum, &c.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Aldous), received a Silver Banksian Medal for a very pretty group, containing, among other things, a fine Oncidium phymatochilum, Angræcum falcatum, Masdevallia Chimæra, Cypripedium superbiens, Odontoglossum confertum, a finely spotted O. crispum, and several forms of Lælia tenebrosa, including L. t. Pittiana, to which an Award of Merit was given. It had yellow sepals and petals veined with rose, and a blush white lip rayed with purple in the throat.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), staged a fine group, to which a Silver Banksian Medal was also given. It contained a plant of the Walton Grange variety of Lælia tenebrosa, with clear yellow sepals and petals, and white lip veined with purple in the throat; Lælio-cattleya × eximia, some fine L.-c. × Arnoldiana (one plant with eight flowers), some good Odontoglossum crispum, Epidendrum vitellinum, Cypripedium Rothschildianum, &c.

Lord Rothschild, Tring Park, Tring (gr. Mr. Hill), staged a very handsome form of Cattleya Warscewiczii, in which the lip was wholly rich purple-crimson, the characteristic yellow blotches being obliterated. An Award of Merit was given.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, sent the well-known Orchis latifolia, and an exceptionally fine form with very large flowers, the former receiving a Botanical Certificate and the latter an Award of Merit.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), showed a plant of the curious Pleurothallis immersa, to which a Botanical Certificate was given.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), sent a good Lælio-cattleya × Canhamiana alba, L.-c. × eximia, a pretty

light form of Cattleya Gaskelliana, two dark forms of Lælia tenebrosa, Cypripedium × selligerum majus, and C. × Harrisianum superbum, a Vote of Thanks being accorded for the group.

J. Bradshaw, Esq., The Grange, Southgate (gr. Mr. Whiffen), sent a good form of Lælia tenebrosa, and a curious dwarf Dendrobium from Burmah, called D. inversum, to which a Botanical Certificate was given. It was about two inches high, and bore a two-flowered inflorescence of the size and colour of Lælia cinuabarina, with a few purple lines on the lip.

J. Foster Alcock, Esq., Northchurch, Berkhamsted, exhibited an unnamed species of Gongora.

F. M. Burton, Esq., Highfield, Gainsborough, showed Cypripedium × Burtonii.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), sent the handsomely blotched Odontoglossum crispum Crawshayanum, and Lælia purpurata Venus, with light rose-purple lip.

A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling), showed the pretty hybrid Cypripedium × Millmanii.

Messrs. James Veitch & Sons, Chelsea, staged a very fine group, to which a Silver Flora Medal was given. It included the handsome Dendrobium × illustre (D. chrysotoxum ♀ × D. pulchellum ♂), to which a First-class Certificate was given, Lælio-cattleya × Arnoldiana, L.-c. × Canhamiana alba, the handsome Disa × Veitchii, Thunia × Veitchiana, Epiphronitis × Veitchii, Catasetum tabulare rhinophorum, Cœlogyne Dayana with six racemes, Odontoglossum hastilabium, and O. Uroskinneri, several Cypripediums, including C. superbiens, C. Curtisii, C. × orphanum, C. superciliare, and C. × Artemis, several fine Cattleyas, as C. Schrœderiana, C. Gaskelliana alba, C. Mossiæ Wageneri, and a fine specimen of C. Mendelii.

Messrs. Hugh Low & Co., Clapton, received a Silver Banksian Medal for a good group, including two very handsome plants of Cypripedium × Gertrude Hollington, the curious C. × Masonii (C. Stonei × Spicerianum), C. Curtisii with six flowers, Grammatophyllum Measuresianum, Cœlogyne pandurata, Oncidium Lanceanum, Bulbophyllum Dearei, and a number of good Cattleyas and Odontoglossums.

Messrs. F. Sander & Co., St. Albans, also exhibited a good group, containing the beautiful new Lælio-cattleya × C. G. Roebling (Lælia purpurata ♀ × Cattleya Gaskelliana ♂), which received a First-class Certificate, Cypripedium præstans, Thunia Bensoniæ grandiflora, T. × Veitchii, Physosiphon Loddigesii, Cattleya Rex, C. granulosa, the rare Odontoglossum Galeottianum, Cypripedium × A. de Lairesse, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, showed a very pretty form of Cattleya Mendelii, with white flowers bearing a crimson blotch in front of the lip.

At the meeting held on July 9th a large number of rarities were exhibited, together with a fair number of the commoner showy species, few, however, being of exceptional merit.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged a particularly interesting group, including the pretty little Polystachya Lawrenceana, Pleurothallis Grobyi, and P. macroblepharis, the remarkable Vanda Roeblingiana, Miltonia vexillaria, Epidendrum (Nanodes) Medusæ, Dendrobium revolutum, an unnamed species of Oncidium and Maxillaria, a very distinct hybrid Cypripedium from C. × selligerum majus ♀ and C. Sanderianum ♂, Masdevallia Reichenbachiana, good plants of the deep purple M. Rolfeana and M. calura, the pretty M. × Stella, M. peristeria, the remarkable M. melanoxantha. Botanical Certificates were awarded to the four following species :—Masdevallia guttulata, an unnamed Lueddemannia, since called L. triloba, Rolfe, Trichopilia hymenantha, and Oncidium olivaceum Lawrenceanum.

G. Marshall, Esq., Claremont House, Grimsby (Mr. Johnson) exhibited a neat group of well-grown things, to which a Silver Banksian Medal was given. It contained half-a-dozen fine plants of Cattleya Warscewiczii, one of which had the petals very prettily variegated, a good C. Gaskelliana, Odontoglossum crispum, a fine specimen of Epidendrum vitellinum with sixteen spikes, and a raceme of the remarkable Lycomorium squalidum, a near ally of Peristeria.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), exhibited a group consisting largely of cut blooms, to which a Vote of Thanks was accorded. It contained Lælio-cattleya × Schilleriana, Cattleya Gaskelliana and C. G. albescens, the white C. Eldorado Wallisii, C. Mendelii, with the lip curiously flaked with white and rose, Odontoglossum Harryanum, Vanda Parishii, and Miltonia vexillaria albescens. An Award of Merit was given to Vanda tricolor planilabris, and Botanical Certificates to Masdevallia coriacea and Pleurothallis longissima.

Lord Rothschild, Tring Park (gr. Mr. Hill), sent good plants of three very interesting Orchids, each of which received a Botanical Certificate. They were—Polycycnis muscifera, with three fine racemes, Promenæa stapelioides, and Oncidium olivaceum Lawrenceanum.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), exhibited a fine white Odontoglossum crispum called Mrs. De B. Crawshay, and a splendid plant of Brassia verrucosa bearing a dozen racemes. An Award of Merit was given to the latter.

Sir Frederick Wigan, Clare Lawn, East Sheen (gr. Mr. Young), received an Award of Merit for a fine form of Miltonia vexillaria called Constance Wigan, with light blush sepals and petals and a white lip.

R. Foster Alcock, Esq., Northchurch, Berkhamsted, sent Lælia tenebrosa.

F. A. Brown, Esq., Lawn Bank, Teddington (gr. Mr. Slater), exhibited

the remarkable Schomburgkia tibicinis, with strongly undulate sepals and petals.

Walter C. Clarke, Esq., Orleans House, Sefton Park, Liverpool, sent a good Cattleya Warscewiczii.

Malcolm S. Cooke, Esq., Kingston Hill (gr. Mr. Buckill), showed a spike of Cattleya Warscewiczii.

J. G. Fowler, Esq., Glebelands, S. Woodford, sent a pretty form of Lælia tenebrosa called Gledstane's variety, with light sepals and petals and a white lip veined with purple.

Messrs. F. Sander & Co., St. Albans, exhibited a fine group, to which a Silver Banksian Medal was given. It contained a number of good Cattleyas, including two plants of C. Rex, each with a raceme of four flowers, some good C. Gaskelliana and C. Eldorado, the rare C. × Brymeriana, an interesting hybrid called C. × Miss Measures (C. Lueddemanniana ♀ × C. velutina ♂), Lælio-cattleya × amanda, L.-c. × Schilleriana, Odontoglossum Harryanum, the pretty Aganisia ionoptera, Cirrhopetalum picturatum, the singular Catasetum Christyanum with a spike of sixteen flowers, Dendrobium Phalænopsis, Anguloa Clowesii and A. eburnea, and other showy things. An Award of Merit was given to the handsome Lælio-cattleya × D. S. Brown (Cattleya Trianæ ♀ × Lælio-cattleya × Schilleriana ♂), and Botanical Certificates to Lycaste Dyeriana, a Peruvian species with glaucous leaves and somewhat drooping green flowers, Dendrobium bracteosum, a rare New Guinea species, and to the Bornean D. speciosissimum, now flowering in cultivation for the first time.

Messrs. Hugh Low & Co., Clapton, received a Bronze Banksian Medal for a neat little group, containing Grammatophyllum Rumphianum, Galeandra Devoniana, some good Oncidium Lanceanum, O. macranthum and O. varicosum, Aërides maculosum, Lælia tenebrosa, Miltonia Roezlii, Cypripedium Charlesworthii, C. Curtisii, C. × Smithii, and others, also some fine Cattleyas, including C. superba and C. Eldorado Wallisii.

Messrs. W. L. Lewis & Co., Southgate, staged a neat group and received a Vote of Thanks. It contained a pan of six plants of the distinct and pretty Cynorchis grandiflora, which, fortunately, proves amenable to cultivation, the curious little Habenaria cinnabarina, another Madagascar species, Vanda parviflora, Bifrenaria vitellina, Odontoglossum hastilabium, Selenipedium × leucorrhodum, Lælia tenebrosa bella, Cattleyas, Cypripediums, &c. A Botanical Certificate was given to the curious little Eria Clarkii.

Messrs. James Veitch & Sons, Chelsea, sent their pretty little Dendrobium × porphyrogastrum (D. Huttonii ♀ × D. pulchellum ♂), and Selenipedium × Dominianum Clymene (S. caricinum ♀ × S. caudatum Wallisii ♂).

Mr. A. Witt, Maida Vale, showed a plant of Sarcanthus filiformis, bearing three racemes of violet-scented flowers.

CONTINENTAL NOTES.

By C. DE BOSSCHERE.

AT the last meeting of the Société Royale d'Agriculture et de Botanique de Gand and the Chambre Syndicale des Horticultures belges a number of beautiful Orchids were exhibited worthy of mention, including about twenty choice varieties of C. Mendelii, C. Mossiæ and C. Warscewiczii. M. Jules Hye-Leysen exhibited a fine Lælio-cattleya × Arnoldiana, the remarkable Cypripedium × Youngii, an elite form of Odontoglossum × Wilckeanum, and the beautiful C. Mossiæ Wageneri. M. Ed. Pynaert sent a good Cypripedium × Morganiæ; M. J. De Cock an Angræcum sesquipedale, with twenty flowers and buds; and M. De Smet-Duvivier Promenæa xanthina, with innumerable small yellow flowers.

The culture of Orchids is continually extending in Belgium. At Bruges Messrs. F. Sander & Co. have opened a branch establishment, where many houses are devoted to them. At Liège also M. A. de Lairesse has constructed a beautiful series of houses for their culture.

In the establishment of M. Ch. Vuylsteke, of Loochristy, we had occasion to admire a richly coloured form of Miltonia vexillaria, a remrakable variety of Odontoglossum Harryanum, Cattleya Warscewiczii, and a pretty light variety of C. Gaskelliana; also an example of Odontoglossum Lindleyanum with twenty racemes, three fine forms of O. × mulus, and O. × elegantius. The beautiful Oncidium macranthum and O. superbiens must also be mentioned. Cypripedium Chamberlainianum commenced to flower in May, 1894, and has since continued to produce flowers and buds on the same raceme.

The seedling Odontoglossums in this establishment continue to progress, but very slowly. Their treatment is a matter of great difficulty, and we propose to note any changes in their growth, as a matter of considerable interest to readers of the *Orchid Review*.

CORRESPONDENCE, &c.

W. J. R., Maghull. Lælio-cattleya × Schilleriana and a small form of Cattleya Rex.

W. B. L., Birmingham. Oncidium candidum and Cirrhæa saccata.

J. S. M., Bishops Waltham. The form of Odontoglossum luteopurpureum known as hystrix, but the sepals and petals of unusual substance.

Photographs received, with thanks. O. O. W., R. le D., C. W., T. I. P. The Cynoches is C. chlorochilon.

W. E. L., Wimbledon. The form known as Dendrobium Falconeri giganteum.

We have received the Catalogue of Plants offered by Mr. W. Bull, F. L. S., for 1895-6, in which 30 pages are devoted to Orchids, the list containing most of the kinds generally cultivated.

VOL. III.] SEPTEMBER, 1895. [No. 33.

THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

VOL. III.] *SEPTEMBER*, 1895. [No. 33.

NOTES.

THE meetings of the Orchid Committee of the Royal Horticultural Society are suspended during September, the next one being announced for October 15th.

A curious example of Cattleya Dowiana and C. D. aurea on the same inflorescence—or, at all events, what is considered as such—has been sent by F. Hardy, Esq., of Tyntesfield, Ashton-on-Mersey. It bears two flowers, one having the lip deep blackish-purple, veined only with yellow throughout, as in the former, the other with two large yellow areas at the sides, as in the latter. The first-named flower is normal in size, but the latter, for some reason, is much smaller, which may not be unconnected with the absence of purple at the sides of the lip, and both may be equally accidental.

It is interesting to note that a fine Bulbophyllum, allied to B. grandiflorum, Blume (whose history is given at page 104), has been found in the Solomon Islands, and is described in the June number of the *Kew Bulletin* (page 138) as B. Cominsii, Rolfe, after its discoverer. The flowers are described as purple and white, and smaller than in B. grandiflorum.

A possible new Orchid pest has been sent by O. O. Wrigley, Esq., Bridge Hall, Bury, which was found in his brother's collection, on the leaves of some newly-imported Vanda cœrulea. It is said to "bite holes in the upper green surface of the leaf, exposing the fibres, and damaging the leaves in a serious manner." The example sent was in the pupa state, and could not be identified. It is roundish-oblong, about a line long, and reddish in colour. Strong measures were taken to destroy the colony, as if

it should increase it would prove a great pest, being "wonderfully active." We should be glad to know if others have observed this insect.

A plant of Cattleya Bowringiana, in the collection of H. J. Ross, Esq., of Florence, has produced a bulblet at the apex of a pseudobulb, just on the seat of an old flower sheath, and, as we learn from Mr. Ross, is rapidly developing into a sturdy little plant. It has eighteen healthy roots, which are fast travelling over the parent leaves. We believe such cases are rare.

The European genus Epipactis has just been detected in Tropical Africa, specimens having been collected by Mr. Scott Elliot on Mount Ruwenzori at 8,000 to 10,000 feet elevation, among heather. The species is described in the August number of the *Journal of Botany* as E. africana, Rendle.

Several flowers of the pretty little hybrid Masdevallia × Fraseri have been received from Captain Hincks, of Richmond, Yorks. They most resemble M. ignea in shape, but the colour shows the influence of the other parent, M. coccinea.

A flower of Cattleya citrina aurantiaca, which has been noted in our pages on more than one occasion, has been sent by R. B. Macbean, Esq., of Lancaster. It is a decided improvement on the typical form, and seems quite constant in character.

A magnificent six-flowered raceme of the beautiful Cattleya Warscewiczii has been sent from the collection of R. B. White, Esq., of Arddarroch, by Mr. Roberts, which illustrates what the species is capable of under good culture. The petals are $4\frac{1}{4}$ inches long by $2\frac{7}{8}$ inches broad, and the lip attains the same length with a nearly circular expanded front lobe $2\frac{5}{8}$ inches broad. In colour it is about typical, the sepals and petals being bright rosy-lilac, and the lip rich purple-crimson, with the two characteristic eyes in the throat large and well-developed, bright yellow on the side next the disc, and passing to primrose at the other side. The effect is superb.

A flower of the distinct and striking Warscewiczella Wendlandii, Rchb. f., comes from the collection of J. D. Hodgson, Esq., of Newcastle-on-Tyne. It bloomed in a pot of W. discolor, and the leaves of the two are so much alike that no difference was observed until the flowers appeared. Both are natives of Costa Rica, and evidently grow together.

The Dendrobium Phalænopsis hololeuca which obtained a First-class Certificate from the R. H. S. the other day has passed into the collection of E. Ashworth, Esq., Harefield Hall, Wilmslow, who sends one of its beautiful pure white flowers. He has six or seven nearly white forms, but this is the only pure albino.

Mr. Ashworth has also purchased the whole stock of seedling Odontoglossum Uroskinneri, including the one which has flowered—O. U. album. Their history is recorded at page 334 of our first volume.

THE HYBRIDIST.

Phalænopsis × Luedde-violacea.

This is a beautiful hybrid, which was raised in the establishment of Messrs. James Veitch & Sons, from Phalænopsis violacea ♂ and P. Lueddemanniana ♀, and received a First-class Certificate from the Royal Horticultural Society on July 23rd last. It is fairly intermediate in character. The flower has much of the shape of the pollen parent, and the sepals are closely barred with transverse rosy purple lines on a lighter ground. The front lobe of the lip is very fleshy, and very slightly hairy on the keel and sides, the colour being bright crimson-purple. The side lobes have the shape of the two parents, and are yellow in front, with rose-purple tips. There are two small teeth in front of the crest. We have received a flower from Messrs. Veitch.

Cattleya × Fowleri.

A very beautiful hybrid derived from Cattleya Leopoldi fertilized with the pollen of C. × Hardyana. It was raised by Messrs. F. Sander & Co., and exhibited by J. Gurney Fowler, Esq., Glebelands, S. Woodford, Essex, at a meeting of the Royal Horticultural Society on August 13th, when a First-class Certificate was awarded. It most resembles the mother plant in habit, but at present is much more slender, and the flowers have the strongly three-lobed lip usually seen in the hybrids of this group. The colour of the sepals and petals is rosy-lilac, and the front lobe of the lip rich crimson-purple. The raceme had two flowers, but when the plant becomes stronger the number will probably increase. Two other plants have since flowered in Messrs. Sander's establishment, one of them considerably paler in colour than the other.

Cattleya × Eros.

A fine hybrid Cattleya from the establishment of Messrs. James Veitch & Sons, to which a First-class Certificate was awarded by the Royal Horticultural Society on August 13th last. It was obtained by crossing C. Mossiæ with the pollen of C. Walkeriana, and much resembles the latter in habit, particularly in the short swollen pseudobulbs. The flowers also have the open shape of the latter, but are much larger, and the colour is bright rose, with a rich crimson velvety lip. It is a very interesting hybrid.

DIES ORCHIDIANÆ.

"YOUR correspondent, 'Argus,' has given us most excellent abstract criticism and advice as to what to seek and what to avoid in the matter of varietal nomenclature. Now I wish to draw from him some concrete and affirmative suggestions, and that they may not be wasted I will take instances only from hybrids of which I already have small plants, and which will have to be named some day.

"In many cases a good name will suggest itself, as flagrans for the cross between Lælia flava and Epidendrum fragrans, or Pertria for C. Percivaliana × C. Trianæ. But as soon as we come anywhere near the deprecated 'vernacular' we strike a rock. For example, what name is suitable for C. Bowringiana × C. bicolor? If old Johannes Bock is thought to be suitably commemorated by the genus Tragia (*tragus* = a billy-goat), may we transmogrify the other name into Arcannulus or Toxocycla, or, may be, for euphony, Cyclotoxa? And shall we call the hybrid Bicyclotoxa, or must we avoid mixing languages, and make it Dichromocyclotoxa, which is, at any rate, two syllables shorter than bicolori-Bowringiana, but, nevertheless, comes under Linnaeus's prohibition of 'names a foot-and-a-half long.' For my part, I incline to simplicity—say Biarcus or Bitoxa, and be done with it. In case of C. Warscewiczii × C. Schilleriana, I am afraid the classics will not help us. Might we call our hybrid Schilliczii or Warscewilla, or Warilla—or whatever? Epidendrum nocturnum × Cattleya Bowringiana might do as Epicattleya × Bona-nox, but will 'Argus' tell me what to call my Epidendrum fragrans × Cattleya Skinneri?

"The American Pomological Society has one rule of nomenclature for fruits that we sorely need to apply to Orchid varieties, namely, that varietal names consisting of more than one word shall be utterly prohibited and ignored, at least, as to the surplusage; and in their biennial catalogue, which is authoritative, all new varietal names are set down, and, if necessary, reduced accordingly. So, for example, the peach or apple sent out as 'Stump the World,' is thus reduced to the mere 'Stump,' as it should be.

"Whatever the florists choose to do in naming secondary hybrids, we have a right to insist that crosses between distinct species shall be named in accordance with botanical canons. So Lælio-cattleya × Frederick Boyle—if it is too late to call it Triceps, from its parents—ought to be Boylei. And so with a host of other vernacular names, which should be banished to the seclusion of the sale catalogues, and not on any account admitted to the horticultural journals, except in parentheses after the properly Latinized form."—THEODORE L. MEAD.—Oviedo, Florida, U.S.A.

I had hoped to get away from this vexed nomenclature question, at all events for a time, but it will keep cropping up, and if the discussion serves to effect an improvement in the present go-as-you-please system probably no one will regret it. And now to the points raised. I should call some of the names suggested above abbreviated anagrams, and whenever such names have a definite meaning of their own, or for any other cause are misleading, I think they ought to be avoided. For example, "flagrans" and "triceps" are Latin words, and I hardly expect that the hybrid between Lælia flava and Epidendrum fragrans will turn out a "glowing" thing; nor should I describe Lælio-cattleya × Frederick Boyle as "three-headed." And I am afraid that none of the names suggested for the hybrid C. Bowringiana × C. bicolor would afford any clue to its parentage. Again, I would not recommend such a name as "Schilliczii." One would immediately enquire, "Who is Mr. Schillicz?" and I have not yet forgotten the result of an enquiry I once made about a Mr. Shuttry, of Masdevallia fame. Lælio-cattleya × Frederick Boyle I have always thought should have been called L.-c. × Boyleana (Boylei if it had been raised by Mr. Boyle), but the former name having been given our authorities retain it. I fully agree with Mr. Mead that crosses between distinct species ought to be named in accordance with botanical canons, and I think that that rule of the American Pomological Society might be applied to such cases, of course with the necessary modifications. The question is—shall we insist upon it?

It just occurs to me that this question of the nomenclature of hybrids was fully discussed in the first volume of the *Orchid Review*, and on turning the matter up (pp. 340-343) I find that most of the points now raised were then touched upon, and I am unable to suggest any improvements. From the remarks there given it is clear that no botanical canon is violated when a hybrid is spoken of by the joint names of its two parents, even if it has another name (see p. 341 above cited), so that Cypripedium × Harrisianum may be called C. × barbato-villosum, if for any purpose it is more convenient. For example, one may speak of the polymorphic hybrid, Odontoglossum × glorioso-crispum, thus briefly indicating the extensive series of hybrids between these two species, without coming under the prohibition of names a-foot-and-a-half long.

I would briefly sum up my suggestions as to compound names thus:—I do not think they are always desirable or necessary. Such happy combinations as Cypripedium × Lawrebel are not always possible. But if such names are given, they should not be so much abbreviated, or the remaining letters so much transposed, that their origin is lost. And the resulting abbreviated anagram should not be identical with any real word, or be misleading in any other way. Thus I think that Epicattleya × Bona-nox

is inadmissible for the hybrid Epidendrum nocturnum × Cattleya Bowringiana, and for the two reasons just given. Either this or the hybrid E. fragrans × C. Skinneri ought to be called Epicattleya × Meadii, and I commend the suggestion to the powers that be, and here leave it.

———

Last month I alluded to Cattleya Mossiæ and its multitudinous varieties. But still they come. I have just dropped across a note of another new one—"one of many varieties, more than forty of which have been deemed worthy of being separately named." This is all for the present. How they differ from existing varieties is not stated, but perhaps this can be more easily imagined than described.

ARGUS.

ORCHID CULTURE IN FLORIDA.

In this climate, almost tropical during the grearer part of the year, many stove and intermediate Orchids thrive with comparatively little care, though glass is necessary for protection during some winter nights when frost may be expected.

For a number of years Dendrobium nobile lived and bloomed entirely exposed, but was killed last winter by the frost that destroyed the orange groves. Still, it is interesting to note that one small plant of it, on a tree trunk in the woods, survived, though ice formed four inches thick, and the thermometer ranged from 17° to 24° F. for three nights in succession.

Some years ago I had a clump of D. nobile, growing on a tree near the house, which was in bud when the thermometer marked 21° F. for a short time. Some leaves were scorched, but the buds opened and the plant bloomed as usual.

Cool house Orchids usually die during the first summer. It has ocurred to me that anyone having a system of tile drains—so common in England—might make connection with them, drawing air cooled by passage through them into and through his Cool house, and thus keep the temperature down even on the hottest days.

This climate is very favourable to seed production. With hybridised Cattleyas and Lælias I often get a good seed from nearly every ovule—perhaps half-a-million in a pod.

I have been successful also in getting young plants from some of the West Indian Epidendrums crossed with Cattleya Skinneri and C. Bowringiana, and recently planted seeds of Bletia verecunda ♀ × Schomburgkia tibicinis ♂ are beginning to grow. This ought to make a curious and interesting hybrid.

T. L. MEAD.

Oviedo, Florida.

CYCNOCHES WARSCEWICZII AND C. AUREUM.

A PLANT of Cycnoches Warscewiczii in the collection of H. J. Ross, Esq., of Florence, has just produced a fine raceme of male and female flowers. It measures 18 inches long, and bears twenty-three flowers, five at the base being females and the rest males. Both sexes are light pea-green in colour, the lip of the female inclining slightly towards yellowish, and the tips of the teeth in the male being quite yellow. The sepals and petals of the latter are also a little paler than those of the female. A plant in the establishment of Mr. W. Bull, of Chelsea, some years ago produced an inflorescence of each sex, on the same pseudobulb, and a figure was given in the *Floral Magazine* (n.s., 1879, t. 381), which gives a good general idea of the species. The flowers, however, are represented larger and of a deeper shade of green than in Mr. Ross's plant. In the latter the segments of the female were 16 to 17 lines long by 5 to 7 broad, and of the male, when expanded, 10 to 13 lines long by $2\frac{1}{2}$ to 3 broad, but being recurved they looked shorter. The plant figured in the *Botanical Register* in 1846 as Cycnoches Egertonianum var. viride is also identical. It flowered with Messrs. Loddiges in August, 1843, and is said to have been introduced from Oaxaca. The flowers are males, and watery-green in colour. Dried specimens were also sent from Costa Rica by Mr. Skinner.

Although Mr. Ross's plant is the C. Warscewiczii mentioned above, I am very doubtful if it is the one originally described by Reichenbach in 1852 (*Bot. Zeit.*, X., p. 734), as an authentic flower of the latter, which was sent by the author to Dr. Lindley, is a female of much larger dimensions. In fact, Reichenbach said it was near C. chlorochilon, and suggested that it might be a dimorphic form of some other species. It was collected at Chiriqui, in Costa Rica, by Warscewicz. This collector also obtained C. aureum, Lindl. (*Paxt.*, *Fl. Gard.*, III., p. 5, t. 75) at the same time and place, and wild dried flowers were also sent by Reichenbach to Lindley, localised and correctly named. I rather suspect that C. Warscewiczii Rchb. f. may be the female of C. aureum, Lindl., partly because they were collected together, and partly because the former is about as much larger than the female of Mr. Ross's plant as C. aureum is larger than the male of the same; which is just what one would expect. C. Dianæ, Rchb. f. (*Bot. Zeit.*, X., p. 636) is an imperfectly known species collected at the same time and place, but two or three poorly dried flowers sent to Lindley are males of about the size of those of Mr. Ross's plant. C. aureum is a most beautiful species said to have been sent from Central America by Mr. Skinner, in 1851, but it is not recorded in whose collection it flowered. It was in this very year that some of Warscewicz's Chiriqui plants—which had been sold at Stevens' Rooms—flowered for the first time in cultivation, and I should not be at all surprised if Cycnoches aureum were one of them. The

Brazilian Cattleya granulosa was credited to Guatemala and Mr. Skinner by Lindley, so that it is evident that some records got astray. Some day additional materials may come to hand which will help to settle some of these doubtful questions, and now that renewed interest is being taken in this remarkable genus I would again express the hope that some one will re-introduce C. aureum, which is probably the handsomest species known. The work of clearing up the history of a genus which has been so much confused as Cycnoches is necessarily slow, but it is satisfactory that materials are gradually coming to hand for this purpose.

R. A. ROLFE.

CYPRIPEDIUM FLOWERING AND SEEDING ON THE SAME SCAPE.

I have a plant of Cypripedium Boxallii magnificum which I fertilized with the pollen of another fine variety of a different kind last February; a seed pod duly formed and swelled, and is apparently full of seed not yet anything like ripe. Latterly a bud has appeared *on the same spike*, below the seed pod, and is now on the point of opening into flower. Has an occurrence of a similar nature on a Cypripedium ever been known? I shall be glad to be informed on this point, as perhaps some of your subscribers can throw some light on the question.

S. G. LUTWYCHE.

Eden Park, Beckenham.

[A similar instance is recorded at page 262 of our second volume, but in this case it was C. Chamberlainianum, which regularly produces a succession of flowers. Our readers may know of other instances.—ED.]

NOVELTIES.

PLEUROTHALLIS AUTRANIANA, Kränzl.—A species which flowered in the collection of Madame W. Barbey-Boissier, of La Pierrière, near Chambésy, Switzerland. Its habitat is not known, but it is said to be allied to P. longissima, Lindl. The flowers are borne in racemes, the colour being light yellow, with the petals and lip hyaline, and spotted and striped with purple-brown.—*Bull. Herb. Boiss.*, iii., p. 357.

DENDROBIUM GLOMERIFLORUM, Kränzl.—A small flowered species of the section Pedilonum, which flowered in the establishment of Messrs. F. Sander & Co., St. Albans. The small pale flesh-coloured flowers are borne in clusters of one to five on the old stems. The habitat is marked as doubtful, and its exact affinity is not stated, but it would appear to be most allied to D. bracteosum, Rchb. f.—*Gard. Chron.*, Aug. 24, p. 206.

CORYANTHES MACROCORYS.

It is interesting to note that the remarkable Coryanthes macrocorys has just flowered among the Peruvian importations of Messrs. F. Sander & Co. It was originally introduced by Messrs. Linden, with whom it flowered in March, 1892, when it was described and figured (Rolfe in *Lindenia*, viii., p. 15, t. 342). It is a most remarkable flower, with the two lateral sepals almost like some expanded bivalve shell, $3\frac{3}{4}$ inches long, with the texture and colour almost of an Aristolochia. The dorsal sepal and petals are much smaller. The hood is conical-oblong, somewhat compressed from front to back, 1 inch long, and very fleshy, the cavity not extending half-way to the apex. On either side of this stands a curved erect horn, $\frac{3}{4}$-inch long, from

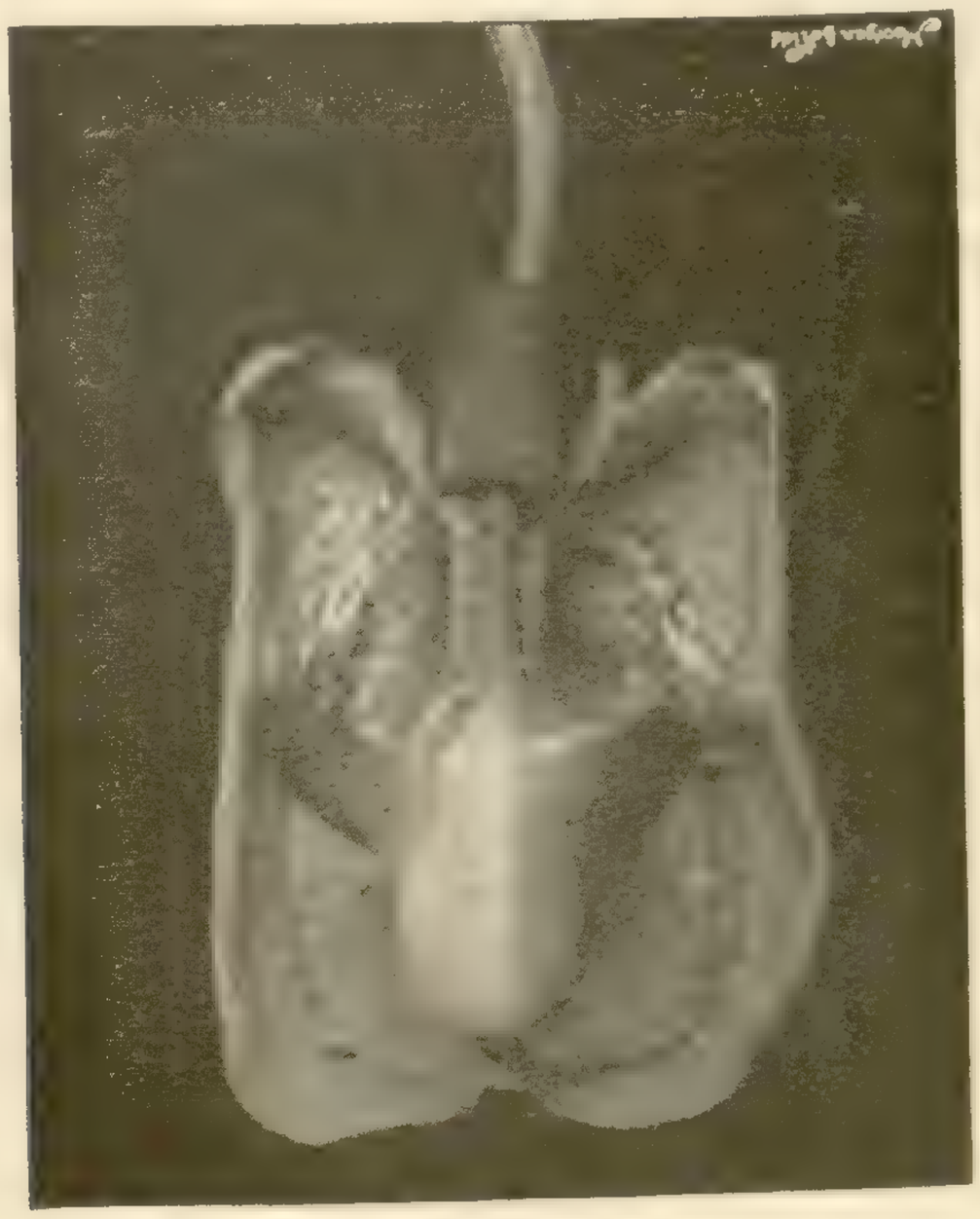

Fig. 10. CORYANTHES MACROCORYS.

which drops of water exude and fall into the bucket-shaped lip beneath. The stalk of the lip is $1\frac{7}{8}$ inch long, and the bucket the same in breadth across the top. The flower generally is of a pale apple-green, with the lateral sepals and the inside of the lip covered with light purple-brown blotches. The helmet is almost suffused with a deeper shade of purple-brown. It is a most remarkable flower, and quite unlike any other species in the genus in the long fleshy hood, to which the name applies. The annexed photograph, which is exactly half natural size, gives an excellent idea of the structure of this peculiar flower. As regards culture we believe it should be treated like a Stanhopea, but should be placed in a light position and not too much shaded.

CATTLEYA—WHAT CONSTITUES A SPECIES?

A QUESTION which has been more or less definitely alluded to on more than one occasion in our pages, is again raised by a correspondent with respect to the genus Cattleya, namely, "What constitutes a species?" There are certain Cattleyas which are treated in the most diverse fashion by different writers. Thus, to give examples, we find Cattleya aurea, C. Dowiana aurea, or C. labiata Dowiana aurea; C. Mossiæ or C. labiata Mossiæ; C. amethystoglossa or C. guttata Prinzii; C. Leopoldi or C. guttata Leopoldi, &c., which is extremely perplexing to those who like to label their plants correctly. Surely it ought to be possible to arrive at something more nearly approaching uniformity. It is the old question again—"What is a species?" and as it is likely to crop up periodically, a few general remarks on the subject may be useful.

Many of the differences alluded to, which we deplore as much as anyone, arise from differences of opinion among authors as to what is a species and what only a variety. Formerly it was commonly believed that species were separated by hard and fast lines, and could be measured and weighed, so to speak; but now we recognise that there is no infallible criterion by which they can be distinguished from each other. All that one can say is that there are certain forms, more or less unequally related to one another, forming little groups, which, like satellites, are generally clustered around some other form. Hence the work of the botanist is to ascertain the relation of these forms to each other, and to arrange them as species and varieties according to the amount of their respective differences. Incidentally it may be remarked that the arrangement of species into genera, or genera into families, has to be dealt with in precisely the same way.

The reason why organisms are related to each other in this particular way is now pretty generally understood, and a very few words in connection with the present subject will suffice to make succeeding remarks clear. Supposing a plant to become widely diffused, it almost invariably comes under the influence of changed conditions of existence, and as every part of an organism is closely related to its complex conditions of life, a corresponding change in the organism itself takes place. Hence variations arise in different geographical areas. In course of time, by a continuation of the process, new forms appear and the older ones become extinct, and thus, successively, varieties, sub-species, and very distinct species are evolved. Species themselves may give rise to groups of allied species in the same way. Varieties may therefore be termed species in course of formation, or incipient species, which readily explains why no hard and fast line can be drawn between the two.

Returning now to the genus Cattleya, the unequal relation of the different forms to each other, and the way some of them are clustered

together in subordinate groups is easily understood. It is also clear that the difficulty above alluded to about their nomenclature does not arise so much about the amount of difference between the various forms as about the value to be attached to these differences in the scheme of classification. A good deal of additional information has come to hand since any attempt was made to ascertain the relation of the different forms to each other, and a revision of the genus in the light of the above remarks would inevitably lead to considerable improvement in their arrangement and nomenclature.

The following is a rough outline of what we believe to be a fairly natural arrangement of the various forms, so far as our knowledge and a linear sequence permits, commencing, as we apprehend, with the more simple forms and progressing towards the more highly developed ones :—

Group of CATTLEYA GUTTATA.—Pseudobulbs elongate, diphyllous. Lip deeply three-lobed, front lobe more or less distinctly stalked.

1. C. GUTTATA, Lindl. (C. sphenophora, C. Morr.).—S. Brazil.
2. C. ELATIOR, Lindl. (C. Batalini, Sander & Kränzl.).—S. Brazil.
3. C. PORPHYROGLOSSA, Rchb. f.—S. Brazil.
4. C. GRANULOSA, Lindl. (C. Schöfieldiana, Rchb. f.).—Brazil.
5. C. LEOPOLDI, Versch. (C. guttata var. Leopoldi, Lind. & Rchb. f. ; C. g. var. Russelliana, Hook. ; C. g. var. Williamsiana, Rchb. f.).—S. Brazil and Pernambuco.
6. C. AMETHYSTOGLOSSA, Lind. & Rchb. f. (C. guttata var. Prinzii, Rchb. f. ; C. g. var. Keteleerii, Houll. ; C. g. var. lilacina Rchb. f. ; C. purpurina, Rodr.).—Bahia.
7. C. ELONGATA, Rodr. (C. Alexandræ, L. Lind. and Rolfe).—Bahia.
8. C. SCHILLERIANA, Rchb. f. (C. Regnellii, Warn. ; C. Aclandiæ var. Schilleriana, Jenn.—Bahia.

Group of CATTLEYA INTERMEDIA.—Characters of preceding, but front lobe of lip sessile or subsessile.

9. C. SUPERBA, Schomb.—Amazon district and British Guiana.
10. C. INTERMEDIA, Grah. (C. ovata, Lindl. ; C. maritima, Lindl. ; C. amethystina, C. Morr. ; C. Aquinii, Rodr.).—S. Brazil.
11. C. DORMANIANA, Rchb. f. (Lælia Dormaniana, Rchb. f. ; Lælio-cattleya × Dormaniana, Rolfe).—Prov. Rio de Janeiro.
12. C. FORBESII, Lindl. (C. vestalis, Hoffmnsg.).—S. Brazil.
13. C. LODDIGESII, Lindl. (C. Arembergii, Scheidw.).—S. Brazil.
14. C. HARRISONIANA, Batem. (C. Harrisoniæ, Paxt. ; C. Harrisonii, P. N. Don. ; C. Papeinsiana, C. Morr. ; C. intermedia var. variegata, Hook. ; C. Loddigesii var. Harrisoniæ, Veitch.).—S. Brazil.
15. C. BROWNII, Rolfe.—Prov. Minas Geraes.—S. Brazil.

Group of C. WALKERIANA.—Habit of two preceding groups, but often much dwarfer. Side lobes of lip considerably reduced in size, and occasionally obsolete.

16. C. DOLOSA, Rchb. f. (C. eximia, Rodr. ; C. Walkeriana var. dolosa Veitch.).—Prov. Minas Geraes, S. Brazil.

17. C. WALKERIANA, Gardn. (C. bulbosa, Gardn. : C. princeps, Rodr.). —S. Brazil.

18. C. NOBILIOR, Rchb. f. (C. Walkeriana var. nobilior, Veitch.).— Brazil.

19. C. SCHRŒDERIANA, Rchb. f. (C. Walkeriana var. Schrœderiana, Veitch.).—Brazil.

20. C. ACLANDIÆ, Lindl.—Bahia.

21. C. VELUTINA, Rchb. f. (C. fragrans, Rodr. ; C. alutacea, Rodr.).— Brazil.

22. C. BICOLOR, Lindl.—S. Brazil.

Group of CATTLEYA SKINNERI.—Habit of preceding groups, but lip entire.

23. C. SKINNERI, Batem. (C. Deckeri, Klotzsch.)—S. Mexico and Guatemala.

24. C. HENNISIANA, Hort.—Habitat not recorded.

25. C. BOWRINGIANA, Veitch.—British Honduras.

26. C. AURANTIACA, P. N. Don (Epidendrum aurantiacum, Batem.).— S. Mexico and Guatemala.

Group of CATTLEYA LABIATA.—Pseudobulbs clavate, always monophyllous. Lip entire.

27. C. LAWRENCEANA, Rchb. f.—Mount Roraima.

28. C. LABIATA, Lindl. (C. Warocqueana, L. Lind.).—Prov. Pernambuco, N. Brazil, and formerly near Rio de Janeiro.

29. C. WARNERI, T. Moore (C. labiata var. Warneri, O'Brien ; C. trilabiata, Rodr.).—Bahia.

30. C. GASKELLIANA, Rchb. f. (C. labiata var. Gaskelliana, Sander).— Venezuela.

31. C. TRIANÆ, Lind. and Rchb. f. (C. quadricolor, Lindl. ; C. labiata var. Trianæ, Duchartre).—New Granada.

32. C. SCHRŒDERÆ, Sander (C. Trianæ Schrœderæ, Rchb. f.).—New Granada.

33. C. MENDELII, Backhouse (C. labiata var. Mendelii, Rchb. f.).— New Granada.

34. C. MOSSIÆ, Hook. (C. labiata var. Mossiæ, Lindl. ; C. Wageneri, Rchb. f. ; C. Reineckeana ; C. Carrierei, Houll.).—Venezuela.

35. C. PERCIVALIANA, O'Brien (C. labiata var. Percivaliana, Rchb. f.). Venezuela.

36. C. LUEDDEMANNIANA, Rchb. f. (C. Dawsonii, Warn. ; C. speciosissima, Hort. ; C. Roezlii, Rchb. f. C. labiata var. Lueddemann iana, Rchb. f.—Venezuela.

37. C. WARSCEWICZII, Rchb. f. (C. gigas, Linden; C. imperialis, Hort.; C. Sanderiana, Hort.; C. labiata var. Warscewiczii, Rchb. f.).—New Granada.

38. C. MAXIMA, Lindl.—Ecuador and North Peru.

39. C. DOWIANA, Batem. (C. aurea, Linden; C. labiata var. Dowiana, Veitch.).—Costa Rica and New Granada.

40. C. ELDORADO, Linden (C. Wallisii, Linden; C. crocata, Rchb. f.; C. virginalis, Lind. and Andrè; C. trichopiliochila, Rodr.; C. labiata var. Eldorado, Veitch; C. McMorlandii, Nich.)—Rio Negro District, Brazil.

41. C. REX, O'Brien.—Habitat not recorded.

42. C. IRICOLOR, Rchb. f.—Habitat unknown.

43 C. LUTEOLA, Lindl. (C. Holfordii, Hort.).—Upper Amazons, in Peru and Brazil.

Group of CATTLEYA CITRINA.—Plant wholly pendulous. Pseudobulbs ovoid, 2- or 3-leaved. Flowers yellow, with subconnivent segments and entire lip. A single anomalous species.

44. C. CITRINA, Lindl. (C. Karwinskii, Mart.).—South Mexico.

Natural hybrids are omitted from the above; otherwise we believe it to be a practically complete list of the various known forms, with their principal synomyms, arranged in such a way as to show their natural affinities —so far as this is possible in a linear arrangement. And now, what is the value of these different forms? Which are species and which varieties? Two or three are still imperfectly known, and in these cases the question cannot be answered with absolute certainty, but with this exception we believe the above to be distinct natural forms, which it is necessary to distinguish by name. Some are now called species in the various *Manuals* and others only varieties, but it is certain that some of the latter are as distinct as some of the former, if not more so. To take one or two examples—and not the most glaring ones either—Why should C. maxima be a species and C. Warscewiczii only a variety of C. labiata? Or if C. porphyroglossa is a species why are C. amethystoglossa and C. Leopoldi only varieties of C. guttata? Each shows a fairly equal amount of difference as compared with its nearest ally, and an equal absence of intermediate connecting links; and each so-called "variety" has itself begun to break up into varieties. The latter point is important, and we think may fairly be applied as a test in the case of closely allied forms of somewhat doubtful rank.

When a form has passed into this stage it has become something more than a mere variety. It has become at least a sub-species, and unless it passes into its allies by a series of connecting links, should be treated as a species. It may be said to have already become autonomous. It is well known that many species are only separated by slight differences, and yet have varieties of their own, just as we find in many of the above Cattleyas. Sub-species perhaps they might be termed, but they should be treated as

species, not as varieties, so as to keep their nomenclature within reasonable limits. For example, Cattleya Mendelii var. Bluntii (of course "var.," being understood, may be omitted). We may admit genus, species and variety, but we ought to draw the line here. Life is too short for polysyllabic nomenclature.

In conclusion, we may add that we have tried to clear up a matter respecting which much misconception exists, and on which we have frequently been asked to express an opinion, and we venture to hope that this will be accepted in principle and carried out in practice. The other alternative would be a considerable reduction in the number of species, not only in the labiata and guttata groups, but also in others; and this, we believe, is neither desirable from the point of view of a rational nomenclature, nor yet in accord with the facts.

ONCIDIUM × GARDNERI FLAVESCENS.

A very curious Oncidium has flowered in the establishment of Mr. W. Bull, of Chelsea, on two or three occasions, which fully agrees with O. × Gardneri in shape and structural details, but differs in having lost the characteristic brown spots on the sepals, petals, and margin of the lip, and thus the flower has become yellowish, with a suffusion of olive-buff. The crest is blackish-purple, and this colour is also suffused across the isthmus of the lip, but of a lighter shade than in the type. It is evidently a variety of O. × Gardneri, though the absence of spots gives it a very different appearance. It has now appeared in another collection. The absence of spotting is perhaps due to the influence of O. dasytyle. In general habit the plant most resembles O. Forbesii.

CATTLEYA GASKELLIANA DELICATA.

This distinct and charming variety of Cattleya Gaskelliana has recently flowered in the collection of M. A. A. Peeters, of Saint Gilles, Brussels. Of several plants which bloomed, the flowers are said to have been almost all alike. The collector found them in a locality in Venezuela outside the beaten track, and being in bloom he took a drawing on the spot, which, on comparison with the living flower, proves to be very correct. It is a very light-coloured form of the species, the flower being white with a very faint trace of lightest blush, and the disc of the lip deep yellow with a small light purple, somewhat veined, blotch in front. The plant we have seen bears a single flower, the result of the first pseudobulb made after importation being small; but when it becomes strong, it will doubtless reach the normal development of C. Gaskelliana.

CYPRIPEDIUM KIMBALLIANUM.

At page 238 of our last issue some remarks were made respecting Cypripedium Kimballianum, and the circumstancesunder which C. præstans has received four additional names were pointed out. We have since discovered that there are two Cypripediums bearing the name of C. Kimballianum, and that both are included in the above-mentioned note. We therefore hasten to say that the reference to the *Gardeners' Chronicle* figure—the supposed hybrid between C. Rothschildianum and C. Dayanum, which may be termed C. Kimballianum No. 2—must be excluded from our note, which will then only apply to the original C. Kimballianum; otherwise C. præstans. Of this second C. Kimballianum we have now seen a leaf and flower, through the kindness of the Editor of the *Gardeners' Chronicle*, and it certainly does appear to combine the characters of C. Rothschildianum and C. Dayanum, and as both are Bornean, it may be a natural hybrid between them. Mr. J. O'Brien comments on our note to the effect that the writer has "*only* (the italics are ours) succeeded in introducing further confusion—in short, has "discovered a mare's nest." (*Gard. Chron.*, Aug. 10, p. 154.) It is true we did not discover that there were two C. Kimballianums, but we certainly cleared up the complex history of the original one. And what of the other? A figure was given, with the solitary statement that it was supposed to be a natural hybrid between C. Rothschildianum and C. Dayanum. There is no description, and nothing to warn one that it is not the plant hitherto known as C. Kimballianum. As a matter of fact it is not permissible to call a second plant C. Kimballianum before the first is disposed of. However, we have now disposed of the first and cleared the way for the second, but it must be written with the sign of hybridity added, thus—C. × Kimballianum. We regret the error, but our readers will now be able to see *how* we "**jumped to conclusions,**" **and apportion the blame.**

It now remains to add a brief description of C. × Kimballianum. The dorsal sepal is $2\frac{3}{4}$ inches long by $1\frac{3}{4}$ broad, whitish-yellow, with 17 to 19 purple-brown lines. Petals nearly flat, 4 in. long by 8 lines broad at base, narrowed to an acute apex above; strongly ciliate; whitish yellow lined with purple brown towards apex, but the nerves only spotted near the base. Lip $2\frac{1}{2}$ in. long, purplish. Staminode obcordate, with a tooth in the sinus, purple-brown, pubescent all over. Leaves strongly tessellated. In most respects the plant approaches C. Rothschildianum, but the marbling of the leaf, the hairs of the petals, some of which are $2\frac{1}{2}$ lines long, and the shape of the staminode, all show the influence of the other species. The hairs of the staminode must have come from C. Rothschildianum, but those of the petals can only have come from C. Dayanum. If it is a wild plant it is a most interesting one, for there can be little doubt as to its **parentage.**

CATTLEYA LUEDDEMANNIANA.

This fine old Cattleya is much less common in cultivation than most others of the labiata group, and a good deal of uncertainty is still felt respecting it. Its usual time of blooming is said to be September and October, the flowers being produced on completion of the young growth without resting, and if they do not appear then the plants stand over until the following season. Yet we have seen living flowers also in the months of January, March, April, May, and June, and last spring we received flowers from three different plants, from which it is evident that our knowledge of the species is not yet complete. Whether these were from exceptionally late growths which only matured in the following spring we cannot say, and it would be interesting if some one would observe this point.

The species originally appeared in the celebrated collection of M. Pescatore, of St. Cloud, Paris, and was described by Reichenbach in 1854 (*Xen. Orch.*, i., p. 29), being dedicated to M. Pescatore's gardener, Lüddemann. Some time afterwards it appeared in England, in the collection of Mr. Dawson, at Meadow Bank, near Glasgow, and was figured as C. Dawsonii, in 1863 (*Warn. Sel. Orch.*, ser. i., t. 16). It had been in cultivation for some years prior to this date. It was also represented in a few other collections at this early date, but nothing seems to have been known of its origin until about the year 1868, when Messrs. Hugh Low & Co. imported it in quantity from Venezuela. It is said to grow on the Cordillera at some distance east of Caraccas, near the coast, and at a lower altitude than C. Mossiæ. It then obtained the garden name of C. speciosissima, under which it is still often cultivated. Then there is a Cattleya Roezlii, Rchb. f., of which Roezl is said to have imported some 6,000 plants, which were soon afterwards lost. The date is not recorded, but it was before their culture was much understood. It was not published until 1882 (*Gard. Chron.*, 1882, ii. p. 457). Reichenbach compared it with C. Mossiæ and C. Warscewiczii, and M. A. Bleu thought it might be a natural hybrid between the former and C. speciosissima (*Rev. Hort.*, 1888, p. 572, with plate), but it is evidently only a form of the present plant. C. labiata Wilsoniana, Rchb. f. (*Gard. Chron.*, 1887, ii., p. 460) also belongs here.

The species has the character of being a shy bloomer. The late Mr. Day observed that in his collection at Tottenham it bloomed very irregularly and seldom, several plants not flowering at all, though they grew and kept healthy. It is one of those which require warm treatment, and should be placed in a light position, being grown in a hanging pan or basket for preference. On a future occasion we may be able to say something about its varieties.

TRICHOPILIA SUAVIS.

THE accompanying illustration represents a beautiful specimen of Trichopilia suavis from the collection of R. le Doux, Esq., Marlfield, West Derby, Liverpool, to whom we are indebted for the photograph. It is grown in a six-inch pot, suspended from the roof, and when photographed bore twenty flowers, part of them, of course, being hidden by the pot in the figure. The species is well known to be one of the best, and grown in this fashion is certainly very effective. A light position in the Intermediate house is usually considered the most suitable for it, good drainage and

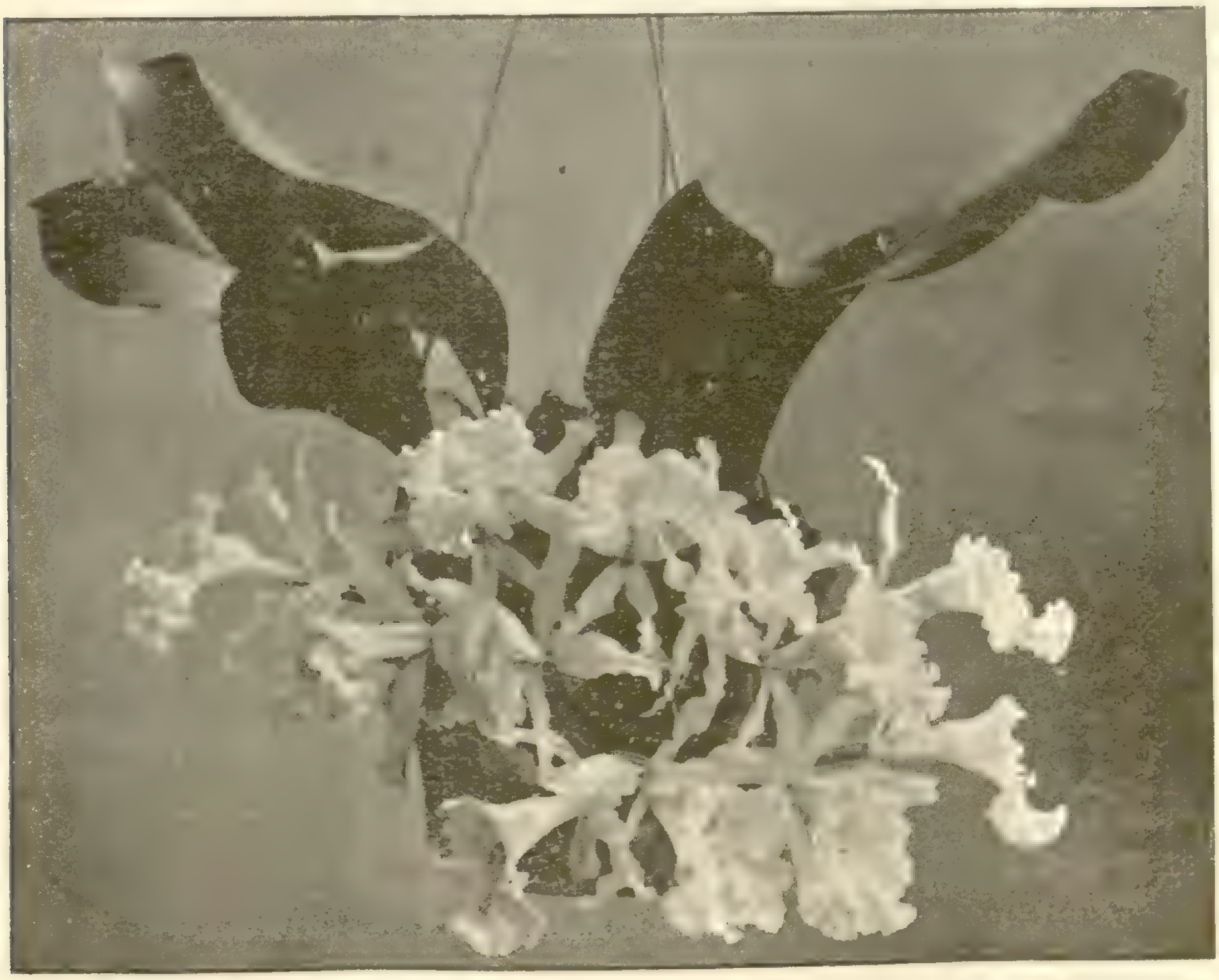

Fig. 11. TRICHOPILIA SUAVIS.

careful watering being also essential. It is a native of Costa Rica, and was discovered about the year 1848 or 1849 by Warscewicz, at an altitude of 5,000 to 8,000 feet on the volcano of Chiriqui. Plants were introduced, and the species flowered in three different collections in 1851. The brilliantly-coloured T. coccinea was also sent by the same collector from the same place. According to E. Morren, Warscewicz found the plants growing on oaks, and a tree called Cupania glabra, at from 20 to 40 feet above the ground, never lower down, and if the trees fall down from accident or old age the Trichopilias upon them languish and die. During the dry season, from November to April, there is neither rain nor dew, and

the wind is often very violent, but during the rest of the year both rains and dews are copious and frequent. If well grown and the bulbs properly matured it is very floriferous, its fragrant white blossoms, with rose-pink spots on the lip, and yellow throat, being produced in March and April.

AN ORCHID COLLECTION IN TRINIDAD.

By T. I. PATTER, St. Anns, Trinidad.

IT may be interesting to readers of the *Orchid Review* to know how we grow Orchids in Trinidad, where many beautiful species are indigenous.

In the first place, the climate being that of perennial summer, with a temperature ranging from 70° to 89° F., and sometimes as much as 94°, in the shade, we do not attempt to grow plants which are natives of cool climates or very temperate regions. And, for the same reason, we require neither hot houses nor heating apparatus of any sort, nature having supplied the necessary caloric *quant. suff.*, so that much of the expense to which European and American Orchid lovers are put is obviated.

When, therefore, a Trinidadian resident starts an Orchid collection, he selects a fine shady tree of medium height (the "Saman," Pithecolobium Saman, I have found to be excellent for this purpose) under which he erects a number of posts of convenient height, which support iron or wooden cross-bars, to which latter he suspends the blocks or baskets containing his treasures. If a friendly tree is not at hand, he will substitute a wooden or iron arbour, over which he will train a creeper which will give the necessary shade. Sometimes even the projecting eaves of a house afford the shade in which the majority of species cultivated here delight.

With either one, or perhaps a little of each, of these arrangements for suspending or shading his plants, the collector will commence getting together, first of all the easily procured native species, such as Catasetum macrocarpum, C. discolor, and their varieties, Oncidium luridum, O. Papilio and O. ampliatum, Diacrium bicornutum, Epidendrum fragrans, E. bituberculatum and E. ciliare, Rodriguezia secunda, and perhaps the almost worthless Schomburgkia crispa, with unexpanding blossoms, found in this island. These grow easily on blocks or in baskets, and thus will he cultivate them, putting them in the baskets with peat and charcoal, if he has the former, but, if not, mixing with the charcoal some chopped-up pieces of well-dried cocoanut fibre, which answers quite as well out here.

As he succeeds with these few he will grow ambitious, and add to his stock the more valuable natives, namely, Oncidium Lanceanum, and, if he can secure any, O. × hæmatochilum, the pretty little yellow-flowered Oncidium iridifolium, O. citrinum, Brassia caudata, Bollea violacea, and

the curious and beautiful Paphinia cristata. Nor will he fail to secure plants of the lovely Stanhopea grandiflora, whose exquisitely perfumed waxy flowers, unfortunately short-lived, excite universal admiration.

Then, having exhausted the native species, he will look out for the gems of the neighbouring land of Venezuela, and the Cattleyas—Mossiæ, Gaskelliana, Lueddemanniana, and their incomparable varieties, will adorn his arbour or rails with their matchless flowers. To these will be added Chysis, Cycnoches, Epidendrums, Schomburgkias, Brassias, Brassavolas, Comparettias, Trichocentrums, Rodriguezias, and all of the known Orchids of the warm regions of South America. Thence he will seek further afield, and, importing from European dealers, will gather in the beauties of the East, such as drooping Dendrobes, graceful Vandas, Saccolabiums, and Phalænopses. From Brazil and Mexico he will get also such Lælias and Cattleyas as will stand the high temperature of this island, and with this stock, and perhaps a few others, he will rest satisfied, and consider his collection as complete as he can make it.

From the foregoing it may be seen what plants are able to grow and flourish here, with ordinary care, such as cleansing the leaves and judicious shading and watering. With some native species very little care is needed, and disastrous results often follow from too careful a treatment of them. I refer particularly to Catasetum macrocarpum and Diacrium bicornutum. These remarkable Orchids are only too often over-watered under cultivation. The former grows on the decaying limb of a tree, generally shaded by other branches, and receives water only when the rain falls on it. The latter grows on rocks and trees overhanging the "wild and restless ocean," and is often washed by sea spray, but for many months of the year it suffers severe drought. The finest plant of this Orchid I ever saw, was the property of a gentleman who did not know much of Orchid culture, but who was very fond of flowers, and on receipt of the Orchid he handed it over to his native gardener, who hung it up in his back garden, and never bothered with it again until its flowering season came round, when he found it had grown so magnificently, and was about to flower so beautifully, that he drew his master's attention to it. When I saw it there were more than 1,000 buds on the plant, and several hundred flowers were then open. At the request of Mr. W. E. Broadway, I photographed it, having had the permission of the owner to do so, and I believe he sent a photo. and an account of it to an English horticultural magazine.

Pot culture is not adopted here fore piphytes, on account of the nuisance caused by cockroaches, the most troublesome pests known to the Orchid cultivator in Trinidad. These abominable insects get down among the roots in the pots, and eat off all the young and tender tips almost as soon as they start. Only continual soaking will remove them, and this method is not unfrequently injurious to the health of the young and growing plant

in the wet season. Cattleyas, Brassias, Epidendrums, and most Orchids with fleshy roots grow best of all in blocks of Calabash wood (Crescentia Cujete), while clustered bulbs of Stanhopea grandiflora, Oncidium ampliatum and O. Baueri, Epidendrum atropurpureum, Cycnoches ventricosum, C. chlorochilon and C. Loddigesii, flourish in cedar baskets, made as open as possible and with perfect drainage, so that only enough moisture is retained at the roots as is actually necessary for the existence of the plants. To render the compost, whether peat or fibre, sweet and pure, charcoal is used for drainage, and the compost or potting mixture put over this, with moss above. Potted—or rather basketed, I should say—in this way, large clumps and clusters of nearly all the plants which grow here thrive well, and often reward their cultivator with remarkably fine blooms in their flowering season. Oncidium Lanceanum, O. × hæmatochilum, and O. ampliatum give the best results when grown in baskets.

Some Dendrobiums which flower freely in hot houses in England are very shy bloomers when imported here. It seems that the great heat and moisture makes them grow to wood instead of flowering, and it is only with careful "drying off," that they can be made to flower. Dendrobium densiflorum is noted for this defect, and the same may be said of Aërides odoratum.

In the dry season (December to May) most of the native and South American species produce their flowers and rest, while in the wet season (June to November) they make their growth. It is the same with most of the imported East Indian kinds. They flower in the dry months of the year, and make fine leads during the heavy rainy season.

Besides epiphytal Orchids, the local cultivator may fancy some terrestrial kinds, and the Cyrtopodiums and Bletia Shepherdii may be added to the collection. With them he will certainly get Peristeria elata, the grand Panama terrestrial, and these will be the only plants he will grow in pots. These are grown almost exactly as in the hot-houses in Europe, only the climate allows us to grow even terrestrials in the open air.

Of the Cyrtopodiums, the ornaments of our native natural savannahs, the loveliest by far is C. Grisebachii, Rolfe (C. cristatum Griseb.), which the Kew authorities have lately identified for me. It much resembles a grass when out of bloom, and the lovely white blossoms with one lemon-yellow stain on the lip are like small flowers of Diacrium bicornutum. The flowers last a long time in beauty, and the plant is only to be found in one part of Trinidad, and there it is fast disappearing owing to the advancing tide of cultivation.

Among the epiphytal Orchids I may mention that Lælia anceps, generally considered a Cool house Orchid, grows and thrives in our warm climate remarkably well, and there are many other reputed "Cool Orchids" which stand our trying climate similarly.

Plants grown on blocks are generally affixed to the block with a little pear or cocoanut fibre, and native moss added. There is a particular kind of moss which has a predilection for cocoa trees, which is our substitute for sphagnum, and answers very well indeed. Block treatment is preferred by many growers in this colony, as it does not allow moisture to sour the roots of the plants, and does not afford a home and breeding place for cockroaches.

Besides those terrible pests, cockroaches, there is a small plant bug, a species of Capsus, which plays havoc among thick-leaved Orchids, especially the bulbless Oncidiums, the Cattleyas, and sometimes Oncidium Papilio. Scale insects (Aspiodotus biformis and another star-shaped scale) trouble Epidendrum atropurpureum, Brassavolas, and Stanhopeas, but ordinary care will soon prevent these less dangerous enemies from doing much injury, but the cockroach is sometimes irrepressible, and in one night will seriously interfere with the growth of a plant just putting out fresh roots, by eating off every growing point.

Each grower in this climate has to learn by experience and by frequent failure how to rear his pets, and therefore I have given only a general sketch of Orchid cultivation here. Each one has his own peculiar treatment for certain species, but nearly all cultivate the majority of these curious and beautiful plants in the manner described above.

SARCANTHUS WILLIAMSONI.

This remarkable little species was exhibited by Messrs. W. L. Lewis & Co., Southgate, at the R. H. S. meeting on June 11th, and received a Botanical Certificate, and as much uncertainty was felt about its correct name, the following note may be placed on record respecting it. It was originally described in 1865 by Reichenbach (*Gard. Chron.*, 1865, p. 674) from a plant in Mr. Day's collection, which had been sent from Assam by Mr. Williamson, Mr. Day's nephew. Four years later another plant was described by the same author, and of precisely the same origin, under the name of S. arietinus (*Gard. Chron.* 1869, p. 416), though on comparison it proves to be only a form of the same species. Major-General E. S. Berkeley has since found it in the Andaman Islands, and as Messrs Lewis's plant was sent from the Shan States by Mr. R. Moore it evidently occurs over a rather wide area. The curved terete leaves are very rigid, indeed, Reichenbach remarked that "it might be cut out of tin, so stiff is it." The small rosy-purple flowers are borne in long, graceful, somewhat-branched racemes, and become somewhat yellowish as they fade. It is rare in cultivation.

R. A. R.

CATTLEYA WARSCEWICZII VARIEGATA.

In a group of Orchids exhibited by G. Marshall, Esq., Claremont House, Grimsby, at the Royal Horticultural Society's meeting on July 9th, was a peculiar form of Cattleya Warscewiczii, in which the sepals and petals were variegated with irregular streaks and blotches of rosy-purple on a lighter ground, somewhat after the fashion of C. Mossiæ Hardyana, the lip being about normal. The peculiarity is likely to be permanent, as in other similar cases, hence the above name. We do not remember to have seen the variety before.

ARTIFICIAL HEAT DURING SUMMER.

With respect to the question raised by one of your correspondents, at page 250, as to how far artificial heat may be dispensed with during very warm weather, experience has taught me that there are very few days in the year, in our Lancashire climate, when it would be safe to do without the assistance of the boiler to maintain the required temperatures in the houses where tropical Orchids are grown. The only Orchids which do not require the help of hot water during the summer months are the Odontoglossums, and possibly the Masdevallias, and a few others which come from considerable elevations above sea-level.

O. O. WRIGLEY.

Bridge Hall, Bury.

CALENDAR OF OPERATIONS FOR SEPTEMBER.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE temperature in all departments should now be allowed a fall of a few degrees. The thermometer in the East Indian house, where there are still many plants in active growth, such as Dendrobiums, Phalænopses, &c., should now range between 75° to 85° in sunny weather; between 70° to 75° in dull weather; and during nights and mornings between 65° to 70°. These figures are merely a guide; should it be very warm, thus admitting of free ventilation, the above temperatures may be considerably increased.

I am pleased to read in last month's *Review* the remarks on the use of fire-heat, by "Orchid Grower." To be thoroughly successful with Orchids it is of great importance to carefully watch and regulate the heating apparatus. In growing Warm house Orchids fire-heat is our first assistant, and it is indispensable during most of the summer, as well as in winter. True, there are many days during the summer when it is not required, because the solar heat is a better substitute. The nights, however, are few when it is not better to have a slight warmth in the pipes, and only during a spell of hot weather can it be dispensed with without evil results probably

following. In the Intermediate house there is usually a longer spell when it is not advisable to use fire-heat both day and night, but here again it is better to have a slight warmth whenever the nights are chilly. In the Cool house fire-heat is not only unnecessary, but injurious, from about the beginning of May until the end of September, unless the weather be very exceptional.

September having now arrived, it has again become necessary to employ artificial warmth pretty regularly in the Intermediate and Warm houses, especially during the night, for it is much better practice to have sufficient warmth in the pipes with bottom air, and also perhaps a little on the top, than it is to shut the houses up close with a view of keeping the thermometer up to the proper degree without such warmth. The first conditions are favourable to a complete and healthy circulation of pure air, which tends to ripen and consolidate all new growth, whilst the latter conditions are favourable to fungoid diseases and immature growth.

The temperature for the Intermediate houses should be 70° to 75° with sun; 65° to 70° without sun; and 60° to 65° during the night. Many plants in these departments, and more especially the Cattleyas and Lælias, will now have nearly or quite completed their season's growth, therefore it becomes advisable to alter somewhat the method of treatment, by giving more light and sun, and an abundance of air on all favourable opportunities, and by supplying less moisture both at the roots and in the atmosphere. Do not, however, go to extremes, but endeavour to strike the happy medium. Twice daily will now be often enough to damp down, doing it night and morning, but should the outside conditions be wet and cold, and there is an insufficiency of fire-heat, it is better not to damp down later than mid-day. The application of water to the roots will from now be a matter requiring some discretion and judgment. Remarks have previously been made in reference to this subject, especially with respect to some species that require exceptional treatment during their dormant season, in order to maintain them in health, and cause them to bloom freely. When new pseudobulbs are completed a less amount of water should be given, when they will become gradually and properly matured, after which the plants—even many of the evergreen kinds, such as Cattleyas, Lælias, Cœlogynes, &c.—are capable of withstanding drought for several weeks in succession during the winter months. It is not easy to say when or how often resting plants should be watered. One must take into consideration the size of the pot, the method of potting and crocking. the amount of compost round the roots, the state of the weather, the strength of the plant, &c., &c.

In the Cool house, as I said before, no warmth from the pipes should be given this month. Simply keep the temperature as low as possible, both night and day. Damp down the surroundings twice daily, and see

that no plant suffers from drought. Cool Orchids enjoy the autumn night air, which should by no means be excluded. Any plants of Odontoglossum crispum which require repotting should be done this month, and not later, and those which it is unnecessary to repot may be re-surfaced with fresh sphagnum moss and peat. Slugs are usually a nuisance at this period, by eating the tender roots and spikes, and should be sought for at night. I think sea-shell gravel on the stages beneath the plants deters slugs, probably because it is sharp, which hinders them from travelling, or it may be that it retains a salty flavour. In any case our Cool house has been remarkably free from slugs since its introduction.

In earlier Calendars, during that extremely dry weather, I recommended slight syringing overhead in the Cattleya and Mexican houses. This practice had better now be discontinued, or cases of damping may result. I am sorry to find a larger proportion of those Cattleyas and Lælias that were the earliest to form their pseudobulbs starting to grow the second time. If asked to explain the cause, I could only suggest that the new growth having already become to a great extent matured and ripened during that long spell of excessively hot and dry weather, it is no more than we might expect, seeing the change of weather, which suddenly enveloped us in a humid, jungle-like climate. This, in my opinion, is why second growth has started, in spite of all the usual precautions.

There are less Orchids in flower during the end of August and the beginning of September than at any other time of the year. Those that are now flowering are therfore most welcome. The foremost among them is doubtless the beautiful Cattleya Dowiana aurea. Take care of it, and give it a warm, light, and dry position for the winter, for it has a delicate constitution. Lælio-cattleya × elegans and its varieties do best in baskets at the warmest end of the Cattleya house. The usual time of flowering is the present season, but they frequently bloom at other periods, so that re-basketting may take place at almost any time during the summer or early autumn, when the plants present the right conditions; or it may be done immediately after flowering, supposing that it is not later than September. Good fibrous peat and fresh sphagnum moss is the best material in which to grow them. Lælio-cattleya × amanda is another now in bloom, and requires similar treatment to the foregoing. Lælia crispa is another, and may be repotted when the flowers have faded. Cattleya Leopoldi and C. granulosa are also serviceable at this date, and may be repotted now or when they commence to grow the following spring. They require nothing more than the temperature of the Cattleya house, as do also C. Loddigesii, C. Harrisoniana, C. bicolor, C. velutina, and others. Cattleya Eldorado and C. Lueddemanniana are two other lovely species now in flower. The best way to grow them is in baskets suspended in the warmest house, and they also require a warm temperature when resting. Then there are Vanda

Sanderiana and V. cœrulea, both lovely Orchids. The first-named was recommended formerly to be grown in the warmest house, but I have had the best results in a shady position in the Cattleya house. Much has of late been written about the last-named, and an average greenhouse treatment advised. My advice still is a warm Intermediate temperature, especially during the winter months, and see at the same time that they never suffer from drought. Galeandra Devoniana is also blooming, an interesting and pretty Orchid, which grows freely enough under exactly the same treatment as required for Cattleyas, and in the same house, the season of growth and rest being identical. Then, again, the Selenipediums are very useful at this season, and also that good old Orchid, Saccolabium Blumei, which, like many others of the same genus, is still worth growing. To do this class of Orchids well it is not in the least necessary to have great heat, as is sometimes supposed, but by this it must not be understood that they will grow in Intermediate temperature. If possible, a position should be selected in the East Indian house which is shady, moist, and quiet, that is to say, free from rapid fluctuations of temperature and atmosphere. Cold draughts, a sudden rise of temperature, drought, &c., is most injurious to these jungle-growing, moisture-loving Orchids.

Side by side with the above will best grow Phajus tuberculosus, and in such a position I have also great hopes of growing that lovely P. Humblotii, which has hitherto not given great satisfaction. Miltonia Roezlii, now at its best, is another loving the same treatment. Bolleas and allied genera also do best when subject to these more quiet and unchanging conditions. Other useful Orchids now in flower are Miltonia vexillaria rubella, and the rare and handsome M. v. superba, which require Intermediate treatment. In the Cool house Oncidium macranthum is making the boldest show, supported by a few spikes of Odontoglossum crispum, O. × Andersonianum, O. bictonense, and a few others.

A correspondent asks a few questions, and "would be much obliged if I could enlighten him on the points raised." Firstly, "What is the cause of the flower-stem of Oncidium Gravesianum, 15 inches long, turning yellow before the flowers expand?" Candidly speaking, I do not know. Such things do sometimes happen under the best and most careful treatment. It doubtless occurs more frequently when the plants are badly cared for, such as growing them too hot or too cold, too wet or too dry. These, among other things, such as insect pests, like thrip and aphis, will bring about the same result. Oncidium Gravesianum is a cool growing Orchid, and should be suspended in the Odontoglossum house.

Secondly, "When is the best time to re-basket Stanhopea tigrina? Some of the new growths are too near the side to develop." I find the month of March a good time to re-basket all Stanhopeas. If, however, the compost remains in good condition the fact of the new growth nearing

the sides of the basket (unless they are actually overlapping) need not cause the cultivator to become uneasy and hasten to re-basket.

Thirdly, "What is the cause of white spots on the foliage of new growths of Odontoglossum crispum. Leaves enclosed?" These white spots are caused by yellow thrips. A small puncture is made with the proboscis of these insects, from whence they extract the life sap of the plant. At first the result is a watery mark, which afterwards turns whitish. Keep the plants quite clean, otherwise it is impossible to grow good Orchids. For the riddance of these pests our correspondent should get the back numbers of the *Orchid Review*, which he does not appear to possess.

Fourthly, "What to do when the new growths of Oncidium unguiculatum, and others, come among the old bulbs, where there is not room for development." In this condition nothing can de done, nor is it necessary, as Nature will provide for itself. Little fear need be entertained that the new growth will not find room to develop. In fact it frequently happens that when the new growths of Orchids have to fight for room, so to speak, they do better than those having an abundance of space.

Fifthly, "When Odontoglossum crispum, and others, keep sending out weak growths, are they useless, or can they be made to send out sturdy flowering-sized pseudobulbs?" When Odontoglossum crispum (and especially weakly plants) sends forth a number of growths from the old as well as from the new pseudobulbs, it is a bad sign and forbodes evil. As surely as these growths are allowed to remain, so surely will the plant collapse. Take away, immediately they are seen, every growth with the exception of one, and let that remain on the last-formed pseudobulb. Such a course, together with proper treatment, is the way, and the only way, to get weakly plants strong and of a flowering size. Well grown vigorous plants never break in this way, much less should weakly ones do so. The natural means for a healthy plant to propagate is by breaking double from the leading growth only. Rarely do they break back from the old ones.

Sixthly, "I have a nice plant of Odontoglossum bictonense, the leaves of which are beginning to turn yellow on the strong new lead. I have only had it a short time and have watered very carefully. What is the cause?" I cannot say. This is another instance where such a result could be attained by a variety of ways—wrong treatment, accidents, parasites, &c. The plant is a free grower, and should do well with the cool Odontoglossums.

Seventhly, "When does Zygopetalum crinitum flower? Last year it had three strong growths but no flower, and this year it has two growths 12 inches long, but no sign of flower." Zygopetalum crinitum flowers during the winter months, and the flowers are produced from spikes which

appear from and simultaneously with the new growths. *Z.* intermedium flowers about the same time, and in the same manner. Your plant is probably a variety of the latter, as the foliage of *Z.* crinitum (true) is rarely more than a foot long when fully matured. Zygopetalums should be repotted when flowering is past, in well-drained pots, in a compost of good fibrous loam and lumpy peat, after which they should be watered carefully until re-established. They will grow freely in the Intermediate house.

Another correspondent asks, "What is the best manure for Orchids?" This raises a very debatable point, and is not easy to answer. I do not recommend any generally, for in the strict sense none is needed. Some inexperienced growers think it is, and are not slow to advise, gratis, its use, without any real proof that it is good or otherwise. In earlier Calendars I mentioned a few Orchids, like Calanthes, Cœlogyne cristata, &c., that may be benefited by a little weak guano water, or sheep manure water. But apart from these, manure is better left alone, or only experimented with very carefully.

ORCHID PORTRAITS.

Angræcum Leonis.—*Garden*, Aug. 3, p. 82, t. 1025, fig. 2.

Angræcum pellucidum, Lindl.—*Gard. Chron.*, Aug. 10, p. 158, with plate.

Dendrobium cruentum, Rchb. f.—*Gard. Chron.*, July 27, p. 91, fig. 17.

Dendrobium Hildebrandii, Rolfe.—*Gard. Chron.*, July 27, p. 93, fig. 18.

Dendrobium nobile nobilius.—*Ill. Hort.*, June 30, p. 183, t. 36.

Dendrobium Phalænopsis var. hololeuca.—*Journ. of Hort.*, Aug. 15, pp. 149, 159, fig. 21; *Gard. Mag.*, Aug. 17, p. 504, with fig.

Lælia Digbyana, Benth.—*Gard. Chron.*, Aug. 10, pp. 152, 153, fig. 30.

Lælio-cattleya × C. G. Roebling.—*Gard. Mag.*, Aug. 10, pp. 492, 493, with fig.

Lælio-cattleya × Digbyano-Mossiæ.—*Gard. Chron.*, Aug. 10, pp. 152, 161, fig. 31.

Odontoglossum Wattianum, Rolfe.—*Journ. of Hort.*, Aug. 25, pp. 149, 159, fig. 22.

Phalænopsis × Luedde-violacea.—*Journ. of Hort.*, July 25, pp. 77, 87, fig. 11.

Pleurothallis scapha, Rchb. f.—*Bot. Mag.*, t. 7431.

Renanthera Imschootiana, Rolfe.—*Gard. World*, Aug. 17, p. 809, with fig.

Saccolabium Mooreanum, Rolfe.—*Bot. Mag.*, t. 7428.

Sopronitis grandiflora.—*Garden*, Aug. 3, p. 82, t. 1025, fig. 1.

Trichopilia suavis, Lindl.—*Garden*, Aug. 3, pp. 79, 80, with fig.

CULTURE OF GALEANDRA DEVONIANA.

In your last number (page 226) you speak of the difficulty of maintaining this species in health, and ask if any correspondent has overcome it. I lost all my Galeandras until I tried growing G. Devoniana on the edge of a small tank used for watering the plants in the East Indian house, where it gets plenty of heat and the vapour rising from the surface of the water. There it flowers well, and throws up strong healthy growth year by year. With it are also Diacrium bicornutum, Dendrobium formosum giganteum, and Phaius Humblotii, which do equally well. The smaller Galeandras, such as G. nivalis and C. D'Escagnolleana, I grow on small branches suspended against the north wall of the East Indian house, which necessarily faces south, and which is overgrown with Vanilla planifolia, Epidendrum radicans, and some soft-wooded stove plants, and is always reeking with damp. Previously I had only tiny pieces remaining, but here, amongst moisture, heat and shade, they have grown splendidly and are constantly in flower.

I see that Miltonia Phalænopsis is considered to be uncertain. With me it grows like a weed, in baskets suspended at the south end of the Cattleya house, where it gets abundance of light and air.

H. J. Ross.

Florence.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE display of Orchids at the Royal Horticultural Society's meeting at the Drill Hall, James Street, Westminster, on July 23rd, was smaller than usual, but included several interesting things, notably Dendrobium speciosissimum, in much better condition than at the last meeting, a new hybrid Phalænopsis, and some exceptionally well-grown Disa grandiflora. The remarkable old Lælia Digbyana, with its deeply fringed lip, on this occasion received the award of a First-class Certificate.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent plants of the charming little Habenaria rhodochila (of which an account is given at page 242), and Epidendrum alatum, a Botanical Certificate being given to the former.

W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gr. Mr. Cragg), exhibited Cypripedium Godefroyæ and Lælia Digbyana, the latter receiving a First-class Certificate.

F. W. Moore, Esq., Royal Botanical Gardens, Glasnevin, sent Bulbophyllum Lobbii var. Colossus, a form with very large flowers, Aërides Lobbii, Epidendrum paniculatum, Mormodes pardinum, and Maxillaria Hubschii, like a small edition of M. grandiflora. Botanical Certificates were awarded to the two latter.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), showed a magnificent form of Cypripedium Godefroyæ leucochilum, and fine well-flowered specimens of Miltonia vexillaria rubella and M. v. superba.

J. Foster Alcock, Esq., Northchurch, Hants, exhibited Lælio-cattleya × Schilleriana.

John T. Gabriel, Esq., Palace Road, Streatham Hill (gr. Mr. Rawson), sent the beautiful Cattleya Rex.

R. T. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), exhibited Bulbophyllum Sanderianum and Maxillaria ochroleuca.

W. C. Parkes, Esq., Llanberis, Lower Tooting, sent a five-flowered inflorescence of Cattleya Warscewiczii; a very good form.

G. H. Rolls, Esq., Bournemouth, sent the pretty little Lælia Lucasiana, Oncidium olivaceum, Grobya Amherstiæ, and a species of Polystachya.

E. H. Woodall, Esq., St. Nicholas House, Scarborough (gr. Mr. Hughes), sent a fine form of Lælia crispa.

Messrs. T. Cripps & Son, Tunbridge Wells, staged a splendidly-grown group of Disa grandiflora, which deservedly received a Silver Banksian Medal. The flowers showed considerable variation in colour, some forms inclining to orange-scarlet and others to crimson.

Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a few fine things, including Phalænopsis × Luedde-violacea, a handsome hybrid derived from P. violacea ♀ and P. Lueddemanniana ♂, to which a First-class Certificate was given. Dendrobium × porphyrogastrum received an Award of Merit, the plant now bearing several racemes of four or five of its pretty rosy lilac flowers. D. glomeratum, Miltonia vexillaria superba, and Cypripedium × Carnusianum, a pretty hybrid derived from C. Haynaldianum ♀ and C. Spicerianum ♂, were also exhibited.

Messrs. F. Sander & Co., St. Albans, showed a choice group, which received a Vote of Thanks. It included some good forms of Dendrobium Phalænopsis, the rare little D. bracteosum and a pale form of the same, the handsome Stanhopea Amesiana, Cattleya Gaskelliana, Odontoglossum Lindleyanum and O. bictoniense album, Sobralia xantholeuca, the fine Batemannia Burtii, Cirrhopetalum picturatum, Miltonia vexillaria, Brassia Lewisii, Cypripedium × Kimballianum, &c. Dendrobium speciosissimum and the rare Angræcum Eichlerianum each received an Award of Merit, and Eria latibractea (Rolfe), a pretty little species having large pale-green bracts and cream white flowers, with some rose-pink on the side lobes of the lip, a Botanical Certificate.

Messrs. Hugh Low & Co., Upper Clapton, also staged a fine group, to which a Vote of Thanks was given. It contained some well-flowered forms of Cattleya Leopoldi, C. granulosa, C. Warscewiczii, C. Rex, and C. Eldorado; the remarkable Vanda Roeblingiana, Oncidium Lanceanum, Miltonia Roezlii, Cypripedium Curtisii, Lycaste Rossiana, two good forms

of Lælio-cattleya × Schilleriana, &c. Dendrobium speciosissimum from this collection also received an Award of Merit, one form exhibited being particularly fine.

At the meeting held on August 13th Orchids were much more numerous, and among the hybrids several sterling novelties put in their first appearance.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), staged an interesting group of well-grown plants, including several rarities, a Silver Banksian Medal being awarded. Two plants selected for Awards of Merit were Lælia monophylla, with over forty of its brilliant scarlet flowers, and Maxillaria fucata with sixteen flowers, while Botanical Certificates went to Polystachya odorata, Dendrobium longicornu, and the pretty little Polycycnis Lehmanni. A magnificent plant of Rhynchostylis cœlestis (Saccolabium cœleste), with sixteen spikes, also received a Cultural Commendation. Other interesting things were Lælio-cattleya × exoniensis, three good forms of Phalænopsis Esmeralda, Calanthe natalensis, Vanda Hookeri, Aërides Lawrenceæ var. Sanderiana, and the singular hybrid Cypripedium × Sanderi-selligerum (C. × selligerum ♀ × C. Sanderianum ♂), which was previously exhibited without a name. (*See* p. 254).

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davis), staged a group of fine things, to which a Silver Banksian Medal was given. Included in it was a noble form of Vanda cœrulea, bearing four racemes of large very dark flowers, some forty in all, to which a First-class Certificate was given. A similar award went to Cattleya × Fowleri, a grand hybrid, raised by Messrs. Sander from C. Leopoldi ♀ and C. × Hardyana. It bore two large rosy-lilac flowers, with the broad undulate front lobe of the lip rich crimson-purple, and the side lobes white, tipped with crimson-purple. The shape was intermediate. Other plants in the group were Cattleya superba splendens, Lælio-cattleya × elegans, with ten-flowered spike, Catasetum Bungerothii, Angræcum Scottianum, Zygopetalum rostratum, Cypripedium superbiens, &c.

T. B. Haywood, Esq., Woodhatch, Reigate (gr. Mr. Salter), staged a group of well grown plants of Miltonia vexillaria and Odontoglossum Harryanum, arranged in most artistic fashion with Cocos Weddelliana and maiden-hair ferns, to which a Silver Flora Medal was given.

Baron Sir H. Schöder, The Dell, Egham (gr. Mr. Ballantine), sent a group of cut blooms of various choice Orchids, to which a Silver Banksian Medal was given. It included a fine form of Cattleya × Hardyana, Cypripedium Stonei platytænium, Sobralia Lowii, Mormodes luxatum eburneum, Vanda tricolor, V. insignis and V. Roxburghiana, Aërides suavissimum var. nobile, A. Lawrenceæ var. Sanderianum, Rhynchostylis

retusa var. guttata, and a panicle of Odontoglossum ramosissimum having white flowers, blotched with purple at the base of the segments only.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), exhibited a magnificent hybrid Cypripedium, derived from C. Rothschildianum ♀ and C. superbiens ♂, to which a First-class Certificate was awarded. It was exhibited under the name of C. × Lord Derby, but the Orchid Committee changed it to C. × Massaianum superbum.

J. T. Holmes, Esq., Beechen Cliff, Bath, received a First-class Certificate for a beautiful pure white form of Dendrobium Phalænopsis, called D. P. hololeuca, allied to D. P. alba, but without any pink lines on the lip, as in that.

E. H. Woodall, Esq., St. Nicholas House, Scarborough (gr. Mr. Hughes), received a First-class Certificate for a fine form of Vanda cœrulea.

C. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), received an Award of Merit for Lælio-cattleya × Elstead Gem (Cattleya bicolor ♀ × Lælia xanthina ♂), a pretty hybrid with yellow sepals and petals, and a rich crimson-purple lip somewhat intermediate in shape. He also sent a supposed hybrid Lælia, and Selenipedium × album (S. × leucorrhodum ♀ × S. Schlimii ♂).

Admiral R. P. Cator, Hazelwood, King's Langley (gr. Mr. Day), showed a good plant of Eria stellata, to which a Botanical Certificate was given.

F. Hardy, Esq., Tyntesfield, Aston-on-Mersey, exhibited a good Lælia crispa and Cattleya Brymeriana.

S. G. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. Paterson), showed Promenæa stapelioides, and forms of Cypripedium Godefroyæ.

F. W. Moore, Esq., Royal Botanical Gardens, Glasnevin, sent a large form of Cattleya granulosa.

R. B. White, Esq., Arddarroch, Garelochead (gr. Mr. Roberts), sent a large form of Odontoglossum Pescatorei, and three of O. crispum, one of which had a broad line on each segment.

Messrs. James Veitch & Sons, Chelsea, received a First-class Certificate for the fine hybrid Cattleya × Eros (C. Mossiæ ♀ × C. Walkeriana ♂), with the habit and shape of the lip somewhat as in the pollen parent, but the flowers much larger and more approaching those of the seed parent in colour.

Messrs. F. Sander & Co., St. Albans, received a Silver Banksian Medal for a very effective group, including many fine forms of Dendrobium Phalænopsis, Cattleya × Kienastiana, C. Dowiana aurea, C. × Prince of Wales, Lælio-cattleya × elegans prasiata, Catasetum fimbriatum, Rodriguesia secunda, Cirrhopetalum picturatum, Calanthe Sanderiana, Cypripedium × vexillarium, C. × œnanthum superbum, C. ×

Frau Ida Brandt, &c. A First-class Certificate was given to the handsome Odontoglossum Wattianum, and an Award of Merit to a fine form of Cattleya Leopoldi.

Messrs. Hugh Low & Co., Upper Clapton, staged a good group, containing Cycnoches chlorochilon, Catasetum purum, Cypripedium Charlesworthii, C. Parishii, Rhynchostylis cœlestis, Cattleya Eldorado Wallisii, and other good things.

Messrs. B. S. Williams & Son, Upper Holloway, staged a nice group of Cypripediums, including C. × orphanum, C. × Morganiæ, C. × vexillarium superbum, C. tonsum, C. × œnanthum, and various others, including a rather striking one called C. × G. H. Rogers (C. insigne punctato-violaceum ♀ × C. superbiens ♂).

Messrs. Heath & Son, Cheltenham, sent a distinct and pretty hybrid called Cypripedium × pendulum, derived from C. Argus Moensii ♀ and C. philippinense ♂.

CYPRIPEDIUM CURTISII PALLIDUM.

A very distinct form of Cypripedium Curtisii has appeared in the establishment of M. Ed. Pynaert, of Gand, Belgium, in which the flower is very delicately coloured, the petals especially being nearly white towards the apex, but densely spotted with minute light purple dots, the marginal hairs being deep purple, as usual. The lip is also pale greenish, with only a slight suffusion of pale purple-brown, the staminode pale whitish green, reticulated with bright green in the centre, and the dorsal sepal closely lined with bright green, and with a very broad white margin. At the base of the dorsal sepal and the petals may be seen a slight suffusion of the usual purple-brown colour, but the rest of the flower is much paler than in the typical form. The leaves are said to show the usual markings. It affords a distinct contrast with the typical form.

CORRESPONDENCE, &c.

Mrs. B., S. Devon. The Cattleya labiata has been affected by the Cattleya fly, but the insects have now escaped, and, unless destroyed, will renew the mischief. Smoke will destroy them, or it is said that a night light lit at dusk in the house will lure them to destruction. Look out for fresh swellings and stamp the insects out as quickly as possible. See vol. i., page 180.

Photographs received, with thanks. T. I. P., Trinidad.

B. A. R., Blackburn. Dendrobium formosum giganteum.

H. J. R., Florence. The Vanda teres seems to be chiefly distinguished by its late flowering, which appears to be constant. Stanhopea costaricensis is, according to description, very near to S. Wardii, and may be only a variety of it.

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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NOTES.

Two meetings of the Royal Horticultural Society, will be held during October, on the 15th and 29th respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

A flower of the magnificent variety of Cattleya × Hardyana known as Countess of Derby, from the collection of T. Statter, Esq., Stand Hall, Whitefield, near Manchester, has been sent by Mr. Johnson. The sepals and petals are pure white, most approaching those of C. Dowiana in shape, and the front of the lip rich amethyst-purple, with the usual blotches on the sides of the throat, and the golden veining on the disc. It is one of the most distinct and beautiful forms of this remarkable natural hybrid, as the purity of the sepals and petals afford a striking contrast with the richly-coloured lip. Its history was given at page 294 of our last volume.

A magnificent inflorescence of the handsome Lælio-cattleya × elegans Cauwenberghei with ten flowers, comes from the collection of W. Thompson, Esq., Walton Grange, Stone. The front lobe of the lip, which in one flower is quite two inches broad, is rosy-crimson, and the rest of the flower light blush-pink. Mr. Stevens writes that the plant has made an enormous growth this season, and the splendid inflorescence testifies to the excellent treatment it has received. It is a charming light variety of Lælio-cattleya × elegans, and one of the most distinct which we have seen.

Two handsome varieties of Odontoglossum crispum have been sent from the same collection: O. c. roseum with light rose-pink unspotted flowers; and O. c. Waltonense, which has a single deep crimson blotch on each

sepal and another on the lip, while the blush-white petals are unspotted. The sepals have a slight rosy suffusion.

A pretty light-coloured Cypripedium Godefroyæ leucochilum has been sent by Col. Marwood, of Whitby, most of the spots being rather small. Different plants seem to vary somewhat in the number and size of the spots.

With respect to our note at page 259 on Odontoglossum Uroskinneri album we learn that the plant which received an Award of Merit from the Royal Horticultural Society on October 10th, 1893, passed the same day into the collection of De Barri Crawshay, Esq., Rosefield, Sevenoaks, where it still remains. Mr. Crawshay states that it is a portion of the plant that bloomed, Mr. Ashworth's being the other. As was originally pointed out, a slight doubt remains as to whether it is an uncrossed seedling, but the remaining plants may throw further light on this point as they flower.

Mr. Crawshay also sends a flower from the splendid specimen of O. Uroskinneri typical, which received a Cultural Commendation at the Royal Horticultural Society's meeting on August 27th last. It was a splendidly grown plant, with three leads and two spikes of sixteen flowers each, a few being unexpanded. The lip of the flower sent is over an inch-and-a-half in diameter.

A fine flower of Lælio-cattleya × Schilleriana has been sent from the collection of Reginald Young, Esq., of Sefton Park, Liverpool. The plant is said to be quite a picture, having twenty-two flowers, four being the largest number borne on one spike. This hybrid never has the large number of flowers on a spike often seen in L.-c. × elegans, so that even in this respect they reflect the differences between their respective Cattleya parents—intermedia and Leopoldi.

The charming little Lælio-cattleya known as L.-c. × Hon. Mrs. Astor has been mentioned in our pages on more than one occasion. A flower received from the collection of T. Statter, Esq., shows well its remarkable character. Although a seedling from Cattleya Gaskelliana, it has almost the shape and size of the pollen parent, Lælia xanthina, while the colour of the sepals and petals is also very similar, being primrose slightly suffused with buff. The front half of the prettily undulate lip is rose-purple, affording a very pretty contrast. It is one of Messrs. Sander's hybrids.

A female flower of Cycnoches pentadactylon has appeared on a plant in the Kew collection, which has produced males only on several previous occasions. The disproportion of male to female flowers in a state of nature, according to Mr. Rand (*Orch. Rev.*, ii., p. 146), is several thousands to one.

The August number of the *Kew Bulletin* contains a fourteenth Decade of new Orchids described by Mr. Rolfe, which are more particularly noted on another page.

A magnificent spray of seven flowers of Dendrobium formosum giganteum has been sent from the collection of H. J. Elwes, Esq., Colesborne, Gloucestershire, by Mr. Lane. One flower has petals over $2\frac{1}{4}$ inches broad, and all the parts are proportionately large. It is a splendid example of good culture.

CATTLEYA DOWIANA.

A most beautiful flower of Cattleya Dowiana aurea has been received from Messrs. Hurst & Son, Purbage Nurseries, near Hinckley, and raises once more the question of its distinctness from the original form. The petals are prettily flushed with pink round the apical margin, the lip very dark without any yellow at the sides, and the flower is powerfully fragrant. These are just the characters of the original Costa Rica form, which, we believe, is rare in cultivation, and we have seen other forms from New Granada which in the characters named approached more nearly to the type than to C. D. aurea. What other differences the Costa Rica form may possess have yet to be pointed out, and our present opinion is that the geographical difference between the two is of more importance than anything else. Perhaps Mr. Richard Pfau, who has already given us some interesting notes on the species (*Orchid Review*, ii., p. 295), will kindly say if he has found anything like C. D. aurea in Costa Rica.

This gorgeous species was originally discovered by Warscewicz in Costa Rica about the year 1850, and some plants were sent to Messrs. Hugh Low & Co., of Clapton, but unfortunately they arrived in bad condition, and eventually died. A packet of dried specimens, said to have been sent to Prof. Reichenbach, also failed to reach its destination, and nothing further being heard about the species its very existence began to be doubted. At length, however, it was re-discovered by Mr. Arce, a native naturalist, who was collecting natural history objects in Costa Rica for Mr. Skinner, and plants were at once transmitted to England. These passed into the establishment of Messrs. James Veitch & Sons, of Chelsea, and one of them flowered in the autumn of 1865. A plant given to Mr. Bateman flowered at Knypersley a year later, and was described by him (*Gard. Chron.*, 1866, p. 922), being dedicated to Captain Dow, of the American Packet service, who brought it to England.

C. D. aurea (T. Moore in *Orchid Album*, II., t. 84) was discovered by Gustav Wallis in 1868, near Frontino, in the State of Antioquia, while collecting in New Granada for M. J. Linden, of Brussels, and plants

were introduced in 1872. After existing some years under the catalogue name of C. aurea, Lind., it was at length published (*Ill. Hort.*, xxx. p. 125 t. 493), though it was soon apparent that at most it was only a variety of C. Dowiana. It is chiefly characterised by the clear yellow sepals and petals and a large yellow area on either side of the lip.

C. D. chrysotoxa, Sander (*Reichenbachia*, ser. 1, II., p. 71, t. 80) is said to be from another Columbian locality, and appears to be about intermediate between the other two. The large golden yellow blotch on each side of the lip mentioned in the description is not shown in the figure, but on the other hand the yellow veins do not extend quite to the apex, which part is wholly crimson, a character even still more marked in one called Young's variety (*Orchid Album*, IX, t. 432).

C. D. Hardyæ is a very distinct and remarkable variety with the sepals and petals sulphur white, but the lip about normal. It was exhibited by Messrr. F. Sander & Co., at the Royal Horticultural Society's meeting on August 27th last, and received a First-class Certificate.

THE HYBRIDIST.

LÆLIO-CATTLEYA × EUNOMIA.

THIS is another very pretty hybrid raised in the establishment of Messrs. James Veitch & Sons, of Chelsea, from Lælia pumila Dayana ♀ and Cattleya Gaskelliana ♂. It was exhibited at the Royal Horticultural Society's meeting on Sept. 5th last, and received an Award of Merit. It is fairly intermediate in shape and in the details of the flower, though on the whole it most resembles the pollen parent in character. The sepals and petals are bright lilac-rose, and the front lobe of the lip amethyst-purple, with two small yellow blotches on the disc. The petals measure over $2\frac{3}{4}$ inches long by $1\frac{1}{2}$ inches broad, and the lip when spread out is 2 inches across. We have received a flower from Messrs. Veitch.

CYPRIPEDIUM × ATROPOS.

This is a pretty little hybrid raised by Mr. Poyntz in the collection of Reginald Young, Esq., of Sefton Park, Liverpool, from Cypripedium × Ashburtoniæ expansum (a form raised by Mr. Cookson) ♀ and C. purpuratum ♂. The seed was sown in December, 1891, and the seedlings did not appear until April, 1893, but the first flower has now expanded. It is unmistakably intermediate between the two parents, though the influence of the pollen parent predominates. The dorsal sepal is suffused with light reddish purple, except at the white margin, and bears about eleven to thirteen deep purple-brown bands. The sides are only a little reflexed. The petals are horizontal, and wholly shining red-purple with darker nerves,

and the lip and staminode also bear much resemblance to those organs in C. purpuratum. The lateral sepals are free, but this peculiarity may not be constant. The plant is still small, and the flower has clearly not yet reached its full development.

Lælio-cattleya × Darwiniana.

A strikingly beautiful hybrid has just flowered in the collection of C. Ingram, Esq., Elstead House, Godalming, raised by Mr. Bond from Lælio-cattleya × elegans Turneri ♀ and Cattleya maxima ♂, which received an Award of Merit at the Royal Horticultural Society's meeting on August 27th last. The flower has the general shape of the seed parent, but the segments rounder and broader, in colour light rosy purple; the side lobes of the lip a little paler and tipped with the same colour as the broad, very undulate front lobe, namely, brilliant amethyst-purple. Some yellow occurs on the sides of the isthmus. The pseudobulbs are monophyllous, as in the pollen parent.

Lælió-cattleya × Elsteadensis.

A charming little plant, raised in the same collection as the preceding, which received an Award of Merit at the same time. Its parents are Cattleya bicolor ♀ and Lælia xanthina ♂, whose characters it very well combines. The sepals and petals are spreading, and bright yellow in colour, and the lip three-lobed, with well-developed white side lobes, and a bright amethyst-purple front lobe. The shape of the lip closely approaches that of L.-c. × elegans, and it is rather curious to find the side lobes so well developed when they are absent in the seed-parent. It is a very interesting little plant.

Lælio-cattleya × Andreana.

This is a hybrid between Cattleya bicolor and Lælio-cattleya × elegans, raised by M. Maron in the collection of M. L. Fournier, of Marseilles, the seed being sown in 1880. The pseudobulbs are diphyllous, and the flower rather larger than that of C. bicolor, with creamy rose sepals and petals, and the middle lobe of the lip rather long, and of a dull magenta colour.

CYPRIPEDIUM × MABELIÆ VAR. LORD DERBY.

The proper name of the magnificent hybrid Cypripedium exhibited by T. Statter, Esq., at the Royal Horticultural Society's meeting on August 13th last, and again a fortnight later, has proved a subject of unusual difficulty. On the first occasion it was exhibited under the name of C. × Lord Derby, and the Orchid Committee gave it a First-class Certificate, but, through a misapprehension, changed the name to C. × Massaianum

superbum. The mistake being discovered, it next appeared that it was the reverse cross of one called C. × W. R. Lee, to which an Award of Merit was given on August 14th of the previous year, but this plant having since died, it was agreed that Mr. Statter's name should be allowed. But this does not by any means end the matter, as those who have the misfortune to keep records know. On the same day that Mr. Lee's plant was certificated another of the same parentage was exhibited by W. C. Clarke, Esq., Sefton Park, Liverpool, under the name of C. × Mabelianum, though not in quite such strong condition as Mr. Lee's. And on July 20th of the present year a plant with the same parentage as C. × Lord Derby was described in the *Garden* (p. 51), from the collection of R. H. Measures, Esq., The Woodlands, Streatham, as C. × Andronicus. The two which flowered first were derived from C. superbiens ♀ and C. Elliottianum ♂, the two later ones from C. Rothschildianum ♀ and C. superbiens ♂, and thus represent the reverse cross, for C. Elliottianum is only a form of Rothschildianum. The Orchid Committee have very properly decided that reverse crosses shall come under the original name (though in this case they made an exception, for the reason above stated), but they ignore the recommendation of the Society's Nomenclature Committee that "hybrids between species should be named in Latin." Taking all these points into consideration we have decided to adopt the name given above. "C. × Mabelianum" was named after Mr. Clarke's daughter, and we therefore consider ourselves at liberty to change the termination into its proper form. Of this we have received an excellent photograph from Mr. Clarke, taken by the lady in question. The one called W. R. Lee is a larger and lighter-coloured variety. The original plant is dead, but we are told that others are in existence. Andronicus we have not seen, and therefore cannot say how it differs from the present one.

The following is a description of the present variety, taken from flowers sent by Mr. Statter:—Dorsal sepal over $2\frac{3}{4}$ inches long by $2\frac{1}{4}$ broad, ground colour cream white, with about 21 purple-brown nerves and a few intermediate smaller ones. Petals $4\frac{1}{2}$ inches long by 1 broad near apex, cream white spotted all over with purple-brown, margins undulate and much ciliate. Lip $2\frac{3}{4}$ inches long, strongly suffused and marbled with purple-brown. Staminode nearly orbicular with two teeth at apex, slightly convex, pubescent, and ciliate, margin pale, centre suffused with purplish and reticulated with greenish brown. Through Mr. Macfarlane's kindness we have been able to compare the present variety with the original drawing of W. R. Lee, and find that the dorsal sepal is a $\frac{1}{4}$-inch longer, as much broader, and more closely veined, the petals more deflexed and more densely spotted, the lip longer and darker, and the staminode broader and darker. It is a magnificent variety.

MILTONIA SPECTABILIS AND ITS VARIETIES.

THE well-known Miltonia spectabilis and its varieties are among the most beautiful Orchids which flower at this particular season, and as we have received a series of blooms from three different sources, a few notes on the subject will be of interest. The collections named are those of E. H. Woodall, Esq., of Scarborough; R. Young, Esq., of Liverpool; and Archdeacon Rawstone, Balderton Grange, Blackburn.

Miltonia spectabilis was originally sent from Brazil in 1835 to the Birmingham Botanical and Horticultural Society, by a Mr. Fry, but is said to have first flowered in this country in the celebrated nursery of Messrs. Loddiges, at Hackney, in 1837, and shortly afterwards with Mr. George Barker, at Birmingham. The genus Miltonia was established for its reception by Lindley (*Bot. Reg.*, xxiii., sub. t. 1976), and a month later Messrs. Knowles & Westcott, unfortunately, also described it, under the name of Macrochilus Fryanus (*Fl. Cab.*, i., p. 93, t. 45), their name having to take rank as a synonym. This typical form is characterised by having white sepals and petals, and a vinous purple lip, the latter shading off into rosy lilac at the margin, and having the nerves of a deeper colour towards the base.

Some ten or twelve years later, a most remarkable variety appeared, with the sepals and petals deep plum-purple in colour, and the lip bright rose-purple, with darker nerves, especially towards the base. In 1849 this was figured in the *Botanical Magazine* (t. 4425) as variety purpureo-violacea, without any account of its origin, and in 1851 it was described and figured as variety Moreliana (*Henfrey Gard. Mag.*, iii., p. 41, with plate). It then appeared that it was sent to M. Morel, of St. Mandé, near Paris, in 1846, by his Brazilian correspondent, M. Porte. Although so remarkably different in colour it is indistinguishable in other respects.

M. s. atrorubens (*Orchid Review*, ii., p. 350) is closely allied to the preceding, but has darker sepals and petals, which almost approach blackish-purple in tint. It is also known as M. s. Moreliana atrorubens (*Will. Orch. Gr. Man.*, ed. 5, p. 414) and M. s. M. atropurpurea (*Gard. Mag.*, 1894, ii., p. 617, with fig).

M. s. radians has the lip pure white, with the exception of a number of broad crimson-purple radiating lines at the base. The sepals and petals are pure white. It flowered in the collection of Senator Jenisch, of Hamburg, probably in the autumn of 1855, and was described shortly afterwards (*Rchb. f. Xen. Orch.*, i. p. 130). It is well figured in the *Orchid Album* (iv. t. 164). The form sent by Mr. Woodall has narrower radiating lines, but even in the case of varieties a little latitude must be allowed. A form appeared in the collection of Sir Trevor Lawrence, Bart., Burford,

Dorking, in 1887 (Rchb. f. in *Gard. Chron.*, 1887, ii., p. 712), in which the petals also had radiating lines at the base—thus partially trilabiate.

M. s. virginalis (*Ill. Hort.*, xv., t. 573) is nearly allied to the preceding, but the radiating lines at the base of the lip are replaced by a broad crimson-purple blotch, occasionally somewhat divided by a narrow white line in the centre. It originally flowered in the establishment of M. A. Verschaffelt, of Gand, in 1868.

M. s. bicolor (*Veitch Man. Orch.*, viii., p. 108) is a plant which has long been known in gardens as M. bicolor, and is said to have appeared with Messrs. Loddiges as long ago as 1839 (W. Baxt. in *Loud. Hort. Brit., Suppl.*, iii., p. 589). It differs from the variety virginalis in having a blotch more than twice the size, extending from the base two-thirds of the way to the apex. A flower sent by Mr. Woodall is superb.

M. s. lineata (*Lindenia*, ii., t. 62) differs from the two preceding in having eight narrow crimson-purple nerves extending beyond the basal blotch nearly to the apex. It appeared in 1886, but its origin is not stated.

M. s. rosea (*Ill. Hort.*, xiv., t. 524) has the sepals and petals flushed with light rose, especially along the centre, and the lip almost as in the type. The original form, which was sent to the establishment of M. A. Verschaffelt, of Gand, in 1867, by Mr. Binot, had some white in front of the lip, but this is exceptional, as in other forms it is absent. The plant called M. s. Moreliana rosea (*Will. Orch. Gr. Man.*, ed. 6, p. 410), according to the description, belongs here, but the figures cited belong to M. S. Moreliana.

These charming little plants succeed well in the Cattleya house, and are admirably adapted for baskets or shallow pans, on account of their dwarf habit.

CYPRIPEDIUM × HARRISIANUM VIRESCENS.

A flower of a remarkable variety of Cypripedium × Harrisianum has been sent by M. A. A. Peeters, of Brussels, which bloomed out of a batch of C. × Harrisianum purchased last year. It is practically identical with the variety above named, which flowered in the collection of H. Little, Esq., of Twickenham, and afterwards passed into that of R. I. Measures, Esq., of Camberwell, as recorded at vol. ii., p. 235. It is a very distinct and pretty form, which has completely lost all the purple markings, leaving the flower entirely greenish-yellow. The leaves are said to be identical with those of the type. The history of the original form does not appear to have been traced, but we presume it to have been a sport from the typical form, as in the case of the analagous variety of C. × Dauthieri described at page 20 of our last volume. It would be rather interesting if the precise origin of the present one could also be traced.

DIES ORCHIDIANÆ.

I was particularly glad to see the article on the species of Cattleya in the last *Review*. It was just the thing wanted, and serves to put the genus on an intelligible basis. Exactly a year before (p. 266) I had called attention to the confusion which existed in the books, and commended the genus to the consideration of the next Orchid Conference that might be called, "for the purpose of reducing the chaos of confusing names to a rational and scientific nomenclature." Cattleya seemed an almost hopeless genus to reduce to order, but the present revision goes a long way to dispel the idea. I hope the writer will complete the work by giving a fuller account of the different species than was possible in the preliminary essay.

I was a little amused over the troubles of the Orchid Committee in the matter of Cypripedium × Lord Derby. In the first place the name was not allowed, but was changed to C. × Massaianum superbum before a First-class Certificate was awarded. Shortly afterwards, however, a mistake was discovered, but it then appeared that the plant was descended from the same two species as one called C. × W. R. Lee, which had previously received an Award of Merit. It was next discovered that the plant in question had since died, and the Committee therefore decided to allow the former name. So far so good, though it hardly settles the matter of what other seedlings from the same batch, which are not dead, are to be called, and I am told that others are in existence.

But a further complication comes in, in the shape of two new claimants for the title, C. × Mabelianum and C. × Andronicus to wit; and these are not only very much alive, but what is more, can claim to have put in an earlier appearance. I am a little curious to see how our authorities will now deal with the matter. There is the gentleman who presides over the Hybridist department, for example, and I confess I don't envy him his task on this occasion. I have read him one or two lectures on this nomenclature question already, though I have not yet succeeded in getting him to adopt all my ideas. "Your views are all very well, Mr. Argus," he says, "in the abstract, but can you get everybody to adopt them? Must I make all the names square with the rules of the R. H. S. Nomenclature Committee before I record them?" "Certainly," I reply. "Well, I'll think it over," he says, "but don't forget that the Orchid Committee can't do that." And there the matter rests for the present.

I thought that the vexed question about Cypripedium Kimballianum was now settled. Not a bit of it, however. Mr. J. O'Brien now suggests that the writer of those notes himself "set up a bogey in order to have the

honour of knocking it down again." This is a rather serious matter, and the question clearly cannot rest where it now is. Mr. O'Brien must either substantiate his charges or withdraw them. It seems to me, however, that this bogey is only a mare's nest of Mr. O'Brien's own creation. I certainly thought that almost every Cypripedium list that has appeared during the last few years—and they number some half-a-dozen, more or less—contained a species called Cypripedium Kimballianum, said to be a native of New Guinea. Mr. O'Brien, however, seems to be quite unaware of the fact, and rushes in with a calm disregard of such petty details as facts and references, and a nice little muddle he makes of it in consequence.

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Most remarkable of all, however, is the statement that the whole thing was unnecessary, being in point of fact "ancient history to Orchid growers." I find no trace of a record, but this of course proves nothing, though all the same I fancy it will prove difficult to substantiate by documentary evidence. But whether or no, the whole incident is instructive, and unless I am greatly mistaken we shall hear of it again, so I will defer further comments for the present.

ARGUS.

LÆLIO-CATTLEYA × ELEGANS VAR. OWENIÆ.

This very handsome natural hybrid has now flowered in the collection of T. Statter, Esq., Stand Hall, Whitefield, Manchester. It is the Lælia × Oweniæ, L. Lind. (*Lindenia*, viii., p. 79, t. 374), which was described as a supposed natural hybrid between Lælia Perrinii and Lælio-cattleya × elegans, but on examination proves a very richly-coloured variety of the latter. Apart from the difficulty that these two plants do not grow together, there is the further one that it shows none of the essential characters of Lælia Perrinii, which come out so strongly in Lælio-cattleya × Statteriana and L.-c. × Decia, both artificially raised from it. The pollen is identical with that of L.-c. × elegans, which alone proves that one parent was a Cattleya, and the characters of C. Leopoldi and Lælia purpurata are as strongly stamped upon it as on other forms of this remarkably polymorphic natural hybrid. The flowers are $5\frac{1}{2}$ inches in diameter across the petals, with almost the substance of the Cattleya parent, and the sepals and petals rich rose-purple, but not of that particular shade shown in the original plate. The lip is only obscurely three-lobed, the front lobe being quite sessile, and, as well as the apex of the side lobes and the disc, of a very rich amethyst purple. The rest of the side lobes, inside and out, is white, affording a remarkable contrast. The back of the column is deep rose-purple. It is certainly a very handsome form.

R. A. R.

CYPRIPEDIUM KIMBALLIANUM.

We had hoped that the vexed question of Cypripedium Kimballianum (see pp. 238, 271) was now settled, but Mr. J. O'Brien returns to it in the *Gardeners' Chronicle* for Sept. 14 (p. 292), and states—(1) that it would be well if the writer gave a reference to the work in which the first C. Kimballianum appeared; (2) that it appears to be straining matters to drop the specific name, and thus set up a bogey in order to have the honour of knocking it down again; (3) that there was no excuse for bringing in the other species mentioned, the statements about which are ancient history to Orchid growers; and (4) that the voluntary description of C. Kimballianum was equally unnecessary because it was properly described by Mr. Grey in *American Gardening*, and courtesy demands that the work of our American cousin should be recognised.

We have already stated that C. præstans var. Kimballianum ultimately became C. Kimballianum through the omission of the specific name, but now we are asked for a reference. Here are five, beginning in 1887 and ending in 1894:—O. Ballif in *Lindenia*, iii. p. 48; *Journ. des Orch.*, v., p. 63; *R. H. Measures' Cyp. List*, ed. 1, p. 38; ed. 3, p. 63; *R. I. Measures' Cyp. List*, ed. 3, p. 34. This is the "bogey" *we* have set up. It would have been a great deal more to the point if Mr. O'Brien had justified his statement about "ancient history" by giving a reference to the work in which the collection of facts that we published had previously appeared. The very fact that we had to collect them gradually from original sources sufficiently disposes of that statement. Instead of our remarks being "unnecessary," they were at first incomplete, because we failed to discover the error made when a second C. Kimballianum was described, and thus fell into the very natural mistake of supposing there was only one. But this we took the earliest opportunity of correcting. Mr. O'Brien's final remark about "courtesy" is as appropriate as his reference to where the second C. Kimballianum is described is complete, which is not saying much. Has he overlooked no references? It may be as well to add that the *Gardeners' Chronicle* figure was not in reality the text of our note, though it may appear to have been. Had it never appeared our note would have taken a somewhat different form; that is all.

Finally, we protest emphatically against Mr. O'Brien's method of criticism. First he stated that we had only discovered a mare's nest, and that our remarks had no application whatever to C. Kimballianum, but as soon as we disproved this he turns round and accuses us of setting up the bogey ourselves in order to have the honour of knocking it down again, which is equally erroneous. How far our remarks were "unnecessary" our readers can judge for themselves.

The disparaging remarks which I read in the *Gardeners' Chronicle* of the 14th September, respecting your articles on Cypripedium Kimballianum and hybrid of the same name (*Orchid Review*, vol. iii., pp. 238 and 271) have puzzled and surprised me. In making up my own Cypripedium list, commenced some years ago, I made use of all material bearing on the subject available to me at the time. Under the letter "K" I find "Kimballianum," with no allusion to "præstans," apparently taken from Mr. R. H. Measures' list, but being from home I am unable to verify this. It is only since seeing your articles that I have been able to add "(syn. præstans)." It is true that under the letter "P" I have "præstans Kimballianum," but there was nothing to show that the two were identical. When, in the *Gardeners' Chronicle* of the 29th June, 1895, I saw the name of "Kimballianum" as a hybrid, I saw at once that *confusion* was inevitable, and, granting that the species should be written "præstans Kimballianum," the fact remains that lists have been published without the prefix, and, no doubt, copied into those of many amateurs like myself.

With regard to your description of the hybrid being unnecessary, I have to thank you for it, for I have never seen a copy of the publication *American Gardening*, and I expect the vast majority of Orchid growers in this country are similarly circumstanced.

REGINALD YOUNG.

Bournemouth, 18th Sept., 1895.

AN IDEAL CYPRIPEDIUM LIST.

By E. H. WOODALL, Scarborough.

"CAVIARE to the general" is, I think, a not inapt description of this flower, which is to some the most prized, and to others the most despised, of all Orchids. As far as my experience goes, however, I am bound to say, that when anyone says to me, "I don't care for those ugly Cypripediums, you know," or "I draw the line at those dingy things," I find on further acquaintance my friend is only a budding Orchid-grower at best, or, more probably, devotes his gardening energies to what he calls "useful things"; while on the other hand, I invariably find the man or woman who says, "How I delight in Cypripediums," to be a true Orchid lover, and an accomplished grower of them. There is something in knowledge, it is evident, or why should those who know most so frequently prefer the Cypripedium to other Orchids? It is, I think, the knowledge of the *beauties* among the vast number of Cypripediums that attracts the man who knows, while the vast number of inferior species and varieties that swamp the stages of some gardeners causes a prejudice against them in the eyes of those who have not time to observe closely.

Cypripediums are decidedly in fashion at present, and will, I think, continue to be so, if due care is taken to weed out the large number of named seedling varieties that are too much alike, and, on the other hand, to increase the many fine and lasting forms that bloom in winter. No flower is more lasting, and none more beautiful when cut and arranged with coloured leaves, whether croton or autumnal foliage, and light and suitable fern sprays; so that I look forward to the Cypripedium becoming a high-class florist's flower, coming in after the chrysanthemum and before the daffodil.

Cypripedium insigne is, in its finest forms, the very best of all the tribe; there may, doubtless, be others still more quaint or more grand, but none more beautiful when a really fine variety is chosen and grown on. To enumerate all the grand varieties of this species would be a serious task, and when the hybrids in which its blood is most evident are added, I am sure fully one-half of the most desirable Cypripediums would be included.

C. insigne Sanderæ must figure at the very top of the list. There are several nearly as exquisite, but even C. i. Ernesti, C. i. Sanderianum, and other lovely forms do not quite touch its clear brilliance of white and gold.

C. i. Chantinii is still the loveliest of the purple spotted forms, and is now abundant enough for everyone to possess a plant. Yet this has all sprung from one clump, imported not so very long ago—a proof of the excellent constitution of this species. The modern montanum forms have done more to popularise C. insigne than anything else, for it is among them that all the newest brilliant coloured forms have appeared.

C. i. Maulei is another old favourite, but I do not think it is any longer worth special mention. There are better forms. The poorest form of C insigne, almost entirely green and brown, with a small white tip, should certainly be excluded by those who like bright and pretty flowers.

In striking contrast to this, I would name C. Rothschildianum (or Elliottianum), magnificent in its tall four- or even five-flowered spikes, of striped red-brown and straw-white flowers, with fiercely spreading moustache-like petals, that sometimes curl upwards at the tips full nine inches apart from each other. A noble plant for a hot stove, but requiring considerable heat to grow it well. Certainly the king of Cypripediums when well grown.

C. Stonei, with its wonderful form, C. s. platytænium, is also very handsome, but the length of time it takes before a "lead" flowers, is much against this species. As far as my experience goes I find it takes six years before a young growth flowers, while C. Rothschildianum takes only two—a strong argument in favour of the latter.

Cypripedium Spicerianum is another species no one should be without: its bright purple-banded white dorsal sepal is always attractive, and there is less variation in this species than any I know of. Easily grown, flowering in

autumn and winter, it is a universal favourite. A variety with a warm brown pouch is perhaps better than the type, which has a green one, but that is the only variety worth naming as far as my knowledge goes.

C. Charlesworthii is another gem, similar in many respects, but with a bright rose-lilac dorsal sepal that does not reflex, and with browner pouch and petals than its near relative. It is most curious how one bears a bright purple and the other a china-white horn on the staminode. There are many varieties of this species, all charming in my eyes, its only fault being that it is much less lasting in flower than the general run of Cypripedes.

C. villosum is another indispensable species, but I think the type is not to be included in this list, though such varieties as C. v. giganteum and C. v. aureum are quite first-rate, and permanent adornments of a collection, for blooms of this species are the most lasting of all flowers, and endure for many months on the plant, and even when cut, will keep for six weeks.

Between C. barbatum and C. Lawrenceanum there is so little difference from a gardening point of view, that I take the larger form, C. Lawrenceanum, as the one that should be included in this list, and then only the brightest in colour, or the whitest, as the striking C. L. Hyeanum. Perhaps its nearly-allied species, C. callosum, shows a still more exquisite green and white variety in C. callosum Sanderæ, but then it is so far nearly unique, and therefore unattainable.

The dainty C. niveum is a gem of the first water, but it is not so easy to grow as might be desired. A little too much water in winter will destroy its roots, and it is not long-lasting in flower compared with many. Its varieties are practically nil, and, curiously enough, its hybrids are not any of them as beautiful as the type.

I wonder how many will disagree with me when I say that C. bellatulum and its hybrids should all, in my judgment, be excluded from this list? The habit of the plant is so ungraceful, the shape and colouring of the spotted flowers ugly and ill-defined, while, as far as I have seen, the hybrids raised from it are lumpish and ungainly in habit even when rich in colour, so that *(me judice)* I would exclude it and all of them, unless it be the pure and spotless C. bellatulum album, which goes far to make amends for all.

There are many Cypripediums of which the shape is so ugly that I can only call them curiosities, but perhaps C. Curtisii in its best and brightest form may be included here, though tonsum, whose name denotes that its petals are "shorn" of ciliæ, must certainly be excluded. Its pouch, too, is enormous, quite out of all proportion to the upper part of the flower.

This ends my list of first-class species and their varieties. Now let us turn to the triumphs of the gardening art, as shewn in the hybrids raised artificially.

Perhaps Cypripedium × Morganiæ, and its brighter variety, burfordiense, is still at the head of the list. At any rate, it is a very fine

stove plant when well grown and flowered. It is so vigorous, and makes so many young growths, that it is well now and again to nick between the older breaks that may not have flowered, when in six or seven months they will each send up a flower spike.

For absolute beauty and clearness of colouring C. × nitens superbum, a cross between a fine form of C. insigne and C. villosum, is quite unrivalled. It is simply a glorified C. insigne of the Chantinii type, heightened by the polish and colour gained from villosum. If I could only grow one hybrid, this would be my choice.

C. × Pollettianum, a more modern hybrid between C. × calophyllum and C. × œnanthum superbum, is the most brilliant of all hybrids, in its best form. It has a perfect rainbow of tints on its dorsal sepal, shading to white at the edge. Even the most rabid antagonists of the Cypripedium allow that there is some pretty colour in this.

C. × Pitcherianum Williamsii is one of the largest and handsomest of winter-blooming hybrids, but requires a stove and a good atmosphere to develop its fullest beauty.

But I shall weary, I fear, if I do not try to compress my remarks!

C. × Leeanum giganteum, and indeed all forms of Leeanum, are excellent, as they must needs be when two such species as insigne and Spicerianum are their parents. The hybrids from the latter are so numerous, and so pretty, that it is very hard to say which is the best.

C. × Niobe, with the dainty C. Fairieanum blood in its veins, is a lovely thing for a warm house, and is small in its growth.

C. × Sallieri aureum recalls something of the colouring of C. insigne Sanderæ, but has brown spots on its dorsal sepal. It is a very long-lasting flower, deriving from C. villosum much of its endurance. The hybrids from C. villosum and others are exceptionally beautiful in several instances and prove the value of their parents.

C. × Lathamianum, a hybrid of Spicerianum and villosum, is a very good and bright winter Cypripedium, but the dark variety is best, in my opinion, and I prefer it to its near relative—C. × Calypso. I notice, however, that C. × Lathamianum, which most men admire, is found fault with by many ladies as being too crude in colour. Indeed, I have heard say that it "swears horribly."

A few hybrids from the nearly allied species—barbatum, Lawrenceanum and callosum, are desirable, but as a whole they are dull, and decidedly prejudice folk against the Cypripedium.

Of the Selenipediums the hybrid S. × Schrœderæ is decidedly very handsome, with its deep rose shaded flowers in spikes of three or four. It grows rapidly, and makes a really fine plant for a cool stove, but, like all its affinity, the flowers drop before they fade. Many will, I think, wish to include S. × leucorrhodum or else S. × Sedeni candidulum, as they like a

cooler atmosphere, and bloom for many months. Their delicate white and rose-tinted blossoms are charming on a good-sized plant. But none of the Selenipediums are worth cutting, as they drop so quickly—hence I only name them incidentally, in spite of their beauty.

There are, no doubt, many others that are nearly as good as some of the above, or when proved may turn out as good, but I contend that those I have mentioned are practically the most desirable. Here is the list in full :—

C. insigne Sanderæ.	C. × Morganiæ.
C. i. Chantinii.	C. × Pollettianum.
C. i. montanum (in variety).	C. × nitens.
C. villosum aureum.	C. × Sallieri aureum.
C. v. giganteum.	C. × Leeanum giganteum (or other vars.).
C. Spicerianum.	C. × Pitcherianum Williamsii.
C. Charlesworthii.	C. × Lathamianum.
C. Rothschildianum.	C. × Harrisianum superbum.
C. Lawrenceanum Hyeanum.	C. × Niobe.
C. Curtisii.	C. × Aylingii.
C. niveum.	S. × Schrœderæ.

Twenty-two varieties in all, out of how many hundreds ?

CYPRIPEDIUM × WILLIAM LLOYD AND C. × CYCNIDES.

A flower of the brilliantly-coloured Cypripedium × William Lloyd (C. bellatulum ♀ × C. × Swanianum) and one of C. × Cycnides, derived from the reverse cross, have been sent by R. H. Measures, Esq., The Woodlands, Streatham. The former was figured at page 177 (fig. 7), but the latter is much larger and considerably different in colour—in fact, somewhat approaching the one called C. × Annie Measures (C. bellatulum ♀ × C. Dayanum ♂). Mr. Measures asks, "Can any confusion have occurred with any of the records ?" It is hard to say, as secondary hybrids are proverbially variable, and C. × Swanianum is descended from C. Dayanum ♀ and C. barbatum ♂. If there is a doubt about any of them we should think it is with that called C. × Cycnides, for we fail to trace the influence of C. barbatum, and would suggest the question whether it may not be descended from the same cross as C. × Annie Measures. We may add that the colour and markings of the dorsal sepal are almost that of the petals, all three being very densely spotted with claret-colour on a cream-white ground. The lip is suffused with a similar colour in front, and most resembles C. bellatulum in shape. The hybrid is both graceful in shape and beautiful in colour.

DENDROBIUM ATROVIOLACEUM.

THE annexed figure, which represents a good specimen of the beautiful Dendrobium atroviolaceum, has been reproduced from a photograph kindly sent by Charles Winn, Esq., The Uplands, Selly Hill, Birmingham, who flowered it some few months ago. The species is a native of New Guinea, and was introduced by Messrs. James Veitch & Sons, of Chelsea, in whose establishment it flowered in 1890, when it was described under the above name (Rolfe in *Gard. Chron.*, 1890, i., p. 512). It is allied to D.

Fig. 12.—DENDROBIUM ATROVIOLACEUM.

macrophyllum, A. Rich., but is readily distinguished by the absence of the yellowish-green pubescence on the pedicels and back of the sepals so characteristic of that species, and by its far brighter colours. Sir Joseph Hooker, when figuring it in the *Botanical Magazine* (t. 7371), very well remarked, "Of all Dendrobes known to me I cannot recall amongst recent discoveries one so strikingly unlike its congeners in coloration, and at the same time so beautiful in this respect, as D. atroviolaceum." Fortunately, it has proved thoroughly amenable to cultivation—or perhaps it would be more correct to say that we have now

learnt how to grow these remarkable New Guinea species—and it may have been some misapprehensions under this head that led the Orchid Committee of the R.H.S. to give it only a Botanical Certificate on its first appearance, in spite of a beautiful raceme of six flowers. However, four years later it received a First-class Certificate, when exhibited by Sir F. Wigan, Clare Lawn, East Sheen, the plant bearing two racemes, one of them with eight flowers. The sepals and petals are primrose-yellow, with numerous dusky brown spots, and the lip inside deep violet-purple, with a few paler radiating lines near the margin, but outside green, with a large dark violet irregular blotch on either side. It should be grown with D. Phalænopsis and the other species from the same region.

NOVELTIES.

DENDROBIUM SANGUINEUM, Rolfe. — A very remarkable species, with crimson flowers, introduced from Labuan, North Borneo, by Messrs. Hugh Low & Co., with whom it has just flowered. It belongs to the section Clavipes, characterised by the pseudobulbs being swollen near the base. The stems are about three feet high, and the flowers are borne in the upper axils, but, unfortunately, do not last long. The colour is remarkable. —*Gard. Chron.*, Sept. 14, p. 292.

PLEUROTHALLIS ROTUNDIFOLIA, Rolfe.—An interesting little Jamaican species, sent to Kew in 1880 by the Assistant Director, Dr. Morris, at that time Director of Public Gardens and Plantations, Jamaica. It belongs to the group Apodæ cæspitosæ, and has straw-coloured flowers with red-purple nerves.—*Kew Bulletin*, 1895, p. 191.

CŒLOGYNE CARINATA, Rolfe.—A New Guinea species, introduced by Messrs. F. Sander & Co., with whom it flowered in June last. It is allied to C. lamellata, Rolfe, from the New Hebrides, and has whitish-green flowers, with orange-brown markings on the lip.—*Kew Bulletin*, 1895, p. 191.

EULOPHIA DEFLEXA, Rolfe.—A Natal species sent to Kew by Captain Allison in 1891, and flowered in the collection in June last. It is allied to E. barbata, Spreng. The sepals are a peculiar shade of light purple-brown, and the petals and lip veined with light purple on a much lighter ground. —*Kew Bulletin*, 1895, p. 192.

POLYSTACHYA ZAMBESIACA, Rolfe.—A small species allied to P. Lawrenceana, Kränzl., sent from the Upper Zambesi district by Mr. Buchanan, and flowered with Mr. James O'Brien in May, 1894, and at Kew a year later. The flowers are greenish-yellow, with a deep brown spot on the base of the column, and some light purple veining on the side lobes of the lip.—*Kew Bulletin*, 1895, p. 192.

BATEMANIA PERUVIANA, Rolfe.—A Peruvian species introduced by Messrs. F. Sander & Co. in March last. The sepals and petals are brown, with green tips, and a few irregular green lines below, and the column and lip white, with innumerable minute purple dots at the base, and a purple stain on the front lobe.—*Kew Bulletin*, 1895, p. 193.

MAXILLARIA PARVA, Rolfe.—A small Peruvian species allied to M. pumila, Hook, which flowered in the collection of C. Ingram, Esq., Elstead House, Godalming, in May, 1890, when it was presented to Kew, and has since flowered annually in the collection. It was found in a clump of Sophronitis grandiflora. The flowers are yellow.—*Kew Bulletin*, 1893, p. 194.

LUISIA CANTHARIS, Rolfe.—A remarkable species introduced from the Shan States, Upper Burma, by Messrs. Hugh Low & Co., with whom it flowered in June last. The lip is almost exactly like a beetle of the genus Cantharis, with corrugated dull purple elytra. The lateral sepals are light green, with a purple margin, and clasp the lip on either side.—*Kew Bulletin*, 1895, p. 195.

ANGRÆCUM STYLOSUM, Rolfe.—A striking Madagascar species introduced by Messrs. F. Sander & Co., with whom it flowered in July, 1893. It has the habit of the African A. apiculatum, Hook., with flowers nearly twice as large, and an unusually large column. The long spur is tinted with light brownish buff, and the rest of the flower white.—*Kew Bulletin*, 1895, p. 196.

NOTYLIA BREVIS, Rolfe.—Introduced from the Andes by Mr. F. C. Lehmann, and flowered in the collection of Sir Trevor Lawrence, Bart., in March last. It is allied to N. micrantha, Lindl., but differs in its very short racemes. The flowers are nearly white, with a stain of yellow on the petals.—*Kew Bulletin*, 1895, p. 196.

PELEXIA SACCATA, Rolfe.—A Guatemalan species, introduced by Messrs. F. Sander & Co., with whom it flowered in May last. It is near P. maculata, Rolfe. The leaves are light green, irregularly blotched with olive green, and a darker band along the midrib, which is light reddish purple underneath. The sepals are green, and the petals and lip whitish. —*Kew Bulletin*, 1895, p. 197.

CATASETUM FEROX, Kränzl.—A species which recently flowered with Messrs. F. Sander & Co. The sepals and petals are green, the latter spotted with purple, and the lip is compared to a lower jaw with a prominent chin and teeth. Its affinity is not stated.—*Gard. Chron.*, Sept. 7, p. 262.

MASDEVALLIA LAWRENCEI, Kränzl. in *Gard. Chron.*, Sept. 21, p. 324.—This is Masdevallia guttulata, Rchb. f. (*Linnæa*, xli., p. 118), unfortunately described again, and therefore takes rank as a synonym.

VANILLAS OF COMMERCE.

An interesting historical and descriptive account of the species of Vanilla yielding aromatic fruits, more or less used in commerce, appears in the August number of the *Kew Bulletin*, prepared, it is stated, by Mr. R. A. Rolfe, A.L.S., Assistant in the Kew Herbarium, who has also monographed the species of the genus, fifty in number, for the Linnean Society.

It appears that at least five species are known to have aromatic fruits, and three of them are of economic importance, though the principal one is V. planifolia, Andr., which yields the well-known Vanilla of commerce. A second species, known as V. Pompona, Schiede, has thicker very fleshy fruits, which are more difficult to dry, and fetch a lower price on the market, though they have long been known as an article of commerce. The fresh fruits are also largely used in the same way as Vanilla. This species is diffused from Mexico to Columbia and Guiana, and is cultivated in the West Indies, being the source of West Indian Vanilloes. Brazilian Vanilla is produced by Vanilla Gardneri, Rolfe, a species here described for the first time, having previously been confused with V. planifolia. It is supposed that South American Vanilla is the fruit of this species. It has a rank odour, but it is said that as much as 9,000 lbs. of the "bean" were produced in 1891, its probable use being as an adulterant. V. odorata, Presl, and a new species called V. appendiculata, Rolfe, also have aromatic fruits, but are not known in commerce. An indigenous species, called V. phæantha, Rchb. f., has been cultivated in the West Indies as a Vanilla plant, but the fruit is shorter and has little perfume. From Humboldt's records it would appear that a Peruvian species also has aromatic fruits, but nothing further is yet known about it.

The history of the Vanilla of commerce is very interesting. According to historical accounts it was used by the Aztecs of Mexico as an ingredient of chocolate prior to the discovery of America by the Spaniards, who adopted its use, and Morren states that it was brought to Europe as a perfume about the year 1510, at the same time as indigo, cochineal, and cacao, and ten years before the arrival of tobacco. Clusius put the first botanical notice on record in 1605. Three years before he had received fruits from one Morgan, apothecary to Queen Elizabeth, and described them under the name of "Lobus oblongus aromaticus," without being aware of their origin or use. Nearly half-a-century afterwards Hernandez gave a figure of a fruiting branch under the name of Araco aromatico. The original drawing is said to have been one of a series of 1,200, executed at great cost in Mexico, during the previous century, by order of the King of Spain. Its use as a drug only is mentioned, and the native name is given as "Tlilxochitl." The Spaniards apparently experienced some difficulty with this name, for in 1658 Piso stated that the fragrant siliqua or pod of the

Araco aromatico of Hernandez was called by the Spaniards "Vaynilla," and that it was used both as a drug and as an ingredient in the manufacture of chocolate. The name is the diminutive of the Spanish *vaina*, a pod or capsule.

Dampier, towards the close of the century, gave some important information about the plant. Speaking of the coast of the Bay of Campeachy, S. Mexico, he mentions finding a small Indian village, and in it a great quantity of Vanilloes drying in the sun. The Vinello was a little "cod," growing on a small vine, which climbed on trees, turning yellow when ripe, when the Indians gathered and prepared it, and sold it cheap to the Spaniards. He had tried to cure some, but without success, otherwise he would have gone yearly and freighted his vessel, and had "Turtle enough for food."

The Vanilla was thus attracting some attention, and soon other similar plants were mistaken for it, for both Plukenet and Sloane confused it with other species of Vanilla whose fruits are not aromatic. Plumier was the first to describe the genus botanically, enumerating three West Indian species, but not even mentioning the Mexican economic plant.

The true Mexican Vanilla was introduced to England before 1739. Miller, in the first edition of his *Gardener's Dictionary*, states that he had some branches of the plant, gathered by Mr. Robert Millar at Campeachy, and sent between papers by way of sample, and as the stems appeared fresh, though gathered at least four months, he planted them in small pots and plunged them in a hotbed of tanner's bark, where they soon put out leaves and roots. Nothing further appears to be recorded about them, and probably they were afterwards lost.

Other authors continued to confuse the economic plant with worthless species, including Linnæus, who in 1753 called it Epidendrum Vanilla, and when Swartz re-established the genus Vanilla, in 1799, he described a species whose fruits are scentless, under the name of V. aromatica, evidently borrowing the name from the economic plant, which still remained practically unknown.

In 1807 Salisbury figured and described a species of Vanilla which had flowered in the collection of the Right Hon. C. Greville, at Paddington, under the name of Myobroma fragrans, which he wrongly identified with one of Plumier's species. A year later Andrews figured and described this very plant, from the same collection, under the name of Vanilla planifolia, adding that it had been introduced by the Marquis of Blandford. The remarkable fact is that although this was the real Vanilla of commerce, neither author was aware of the fact, and the former distinctly stated that it was different.

Two interesting circumstances about this plant appear not to have been recorded until long afterwards. The first is that in the very year in which Salisbury's figure appeared Francis Bauer also prepared drawings from the Paddington plant, not only of the flower, but also of the fresh fruit.

Whether he detected the aromatic fragrance is not known, but Salisbury's specific name "fragrans" is suggestive. How the flower became fertilized is equally uncertain—probably not by design. The next fact is that in 1812 Parmentier obtained cuttings of the Paddington plant, which were confided to the care of Dr. Sommé, Director of the Antwerp Botanic Garden. There it grew rapidly, and slips were widely distributed in Belgium and France, where they flowered once or twice but never fruited. In 1819 Dr. Sommé sent two plants to the Dutch Colonies of Java by M. Marchal, who with difficulty saved one. This flowered at Buitenzorg, but failed to fruit. Blume could hardly have known its history, for in 1825 he described it again as V. vividiflora.

To return, however, Humboldt, in 1811 gave a detailed account of the Vanilla of commerce, without clearing up its botanical source, and in 1829 Dr. Schiede gave further information, and described three economic species V. sylvestris, and V. sativa, which he thought had been confounded under the name of V. planifolia (and which are really the wild and cultivated forms of that species) and V. Pompona. A fourth, V. inodora, which he described as perfectly useless, being unscented, now proves to be V. aromatica, long supposed to be the source of true Vanilla.

To Prof. C. Morren belongs the credit of first producing fruits in quantity, and of proving that V. planifolia was the source of the true Vanilla of commerce—a suggestion which had been thrown out by Schiede. By a particular method of culture he succeeded in producing 54 flowers on one plant, and by fertilising them artificially obtained the same number of pods. Next year he had a crop of 100 pods. His paper "On the production of Vanilla in Europe," which was read before the British Association at Newcastle in 1838, was a very remarkable one, and he appears to have first pointed out the need for artificial fertilisation. Deltiel in 1872 stated that it was first practised by Newmann, in 1830, in the Jardin des Plantes, but Morren does not mention it. Morren also traced the history of his plant back to the original one at Paddington, and its introduction to Java, above mentioned.

Deltiel ascribes the present important industry in Réunion to plants obtained from Paris in 1822, which, judging by the history of the plants then cultivated on the Continent, probably also came from the Paddington plant. He also states that the plants thus introduced into Réunion proved sterile until about the year 1841 or 1842, when a slave named Edward Albius discovered a simple and rapid method of fertilising the flowers artificially, which has been practised ever since. It appears that in Mexico fertilisation is effected by small bees belonging to the genus Melipone, which visit the flowers for the sake of the honey they afford.

Mr. Morris states that in British Honduras also the fruits hang in fine masses in the forest, diffusing a fragrance perceptible at a considerable

distance, but in 1883 they were allowed to rot on the vines. The species grows wild in the Vera Cruz district, S.E. Mexico, in Yucatan, British Honduras, Guatemala, and Costa Rica, being there fertilised naturally by bees. It is now cultivated in several tropical countries, but artificial fertilisation has to be resorted to.

Such, briefly, is the history of the most important Orchid in existence, and surely the most confused. Those who wish for further details should consult the original paper, in which the author has brought out several interesting and rather unexpected facts.

AN AMATEUR'S NOTES.

AMONG the readers of the *Orchid Review* there must be a considerable number of amateur Orchid growers to whom a corner in its pages would be a welcome addition, and, pending the time when some abler pen than mine shall take up the matter, I propose to contribute a few seasonable notes, without in any way trespassing on the domain of Mr. Burberry and the other writers who so ably preside over the different departments of the work.

The dull season of the year is just passing away, and with it such deservedly popular favourites as Cattleya Dowiana, Warscewiczii and Gaskelliana retire until the proper season of flowering again comes round. The comparatively new Cattleya Rex must be bracketed with the same group. It is a charming thing in every sense of the word, and is gradually becoming better known. But their place is being filled by the good old autumn-flowering C. labiata, now fortunately so common that all can have a supply. The sheaths are rapidly swelling up, and on looking round this morning I find one plant has seven flowers already expanded, in two trusses—a perfect picture of loveliness. Then Cypripedium insigne is pushing up a perfect forest of scapes, promising good things to come, while C. × Leeanum, which I think the best of all autumn-flowering hybrids, is coming on well. Lælia anceps has done wonderfully well this year, and is throwing up numerous strong spikes, while the pretty little Lælia × Eyermaniana has also started.

The glorious weather we are now having is working wonders in ripening off the growths, and everything looks extremely promising for next season.

Among the things actually in flower at the moment of writing are several gems of the very first water. Cypripedium Charlesworthii, for example, has a dozen flowers, and its lovely pink dorsal sepal, and staminode which might have been carved out of ivory, are equally remarkable. Vanda cœrulea, too, is quite unique in its delicate lilac-blue colour, and I only wish I could grow it like Mr. Woodall does. Three little gems

among terrestrial Orchids come next, Habenaria carnea and its white variety nivosa, and the brilliant H. militaris. A little pan of each stand side by side, forming a picture of elegance. Oncidium ornithorrhynchum and incurvum are at their best, and the brightly-coloured O. Lanceanum carries a small spike, the latter being in the warm house, with Dendrobium formosum, also in its prime.

But the plant of all others which brightens up this house at the present time is the beautiful Dendrobium Phalænopsis, which has thrown an occasional spike for months. Now, however, it is present in force, and in considerable variety. It is a charming thing for cutting, as it lasts well, and is seen to advantage under artificial light. Curiously enough, the three great acquisitions of recent years are all autumn-bloomers. I allude to the present one, Cattleya labiata, and Cypripedium Charlesworthii, all of which have come home in large quantities.

I could tell of various other beauties just now in flower, but must not prolong my remarks, so will merely mention Odontoglossum grande and one or two spikes of O. crispum: Miltonia spectabilis and its dark variety, Moreliana, which are two especial favourites: Cattleyas Leopoldi, Loddigesii and Harrisoniæ, Lælia pumila, and several hybrid Cypripediums. "Dingy brutes" one or two of my friends call them. Well, there's no accounting for taste, but one or two of them are my special favourites, and I think I shall have something to surprise them presently.

AMATEUR.

CATTLEYA × JOHNSONIANA AND VAR. ASHTONIANA.

Flowers of the above very pretty hybrids have been sent by T. Statter, Esq., Stand Hall, Whitefield, Manchester. They were obtained by crossing Cattleya Harrisoniana with the pollen of C. Warscewiczii, and were exhibited by Messrs. W. L. Lewis & Co., of Southgate, at the Royal Horticultural Society's meeting on September 26th, 1893, under distinct names. A year later the second one received an Award of Merit. We are, however, bound to consider them as forms of the same hybrid. C. × Johnsoniana has the sepals and petals, also the side lobes of the lip and margin of the front lobe of a very pretty shade of lilac-rose, the disc of the front lobe being pale primrose. The variety Ashtoniana is rather larger, and a little paler, with the apical part of the front lobe rich crimson-purple. The side lobes of the lip are also rather more expanded. They are fairly intermediate in shape, and are closely allied to C. × Minucia, in which C. Loddigesii replaces C. Harrisoniana as the seed parent. A flower of this is also sent, and distinctly shows the shape and greater substance of this species. Mr. Statter considers these three, and especially the latter, as by far the longest lasting Cattleyas he knows.

THE WEST ORCHID BASKET.

We have received from the Leeds Orchid Company, Roundhay, Leeds, a specimen of a new Orchid basket, which has been invented by Mr. C. E. West, and for which, we understand, a patent has been secured. It differs from the ordinary type of basket in several particulars, which strike us as being decided improvements. In the first place, the bars are not square, but nearly triangular in section, which enables an additional pair to be mitred in at the top, forming a complete rim, and thus preventing the water from running off at the two low sides. The same arrangement also enables the bottom to be mitred in, which thus becomes additionally secure; and as the bars are held together at each corner by a wire, the basket becomes

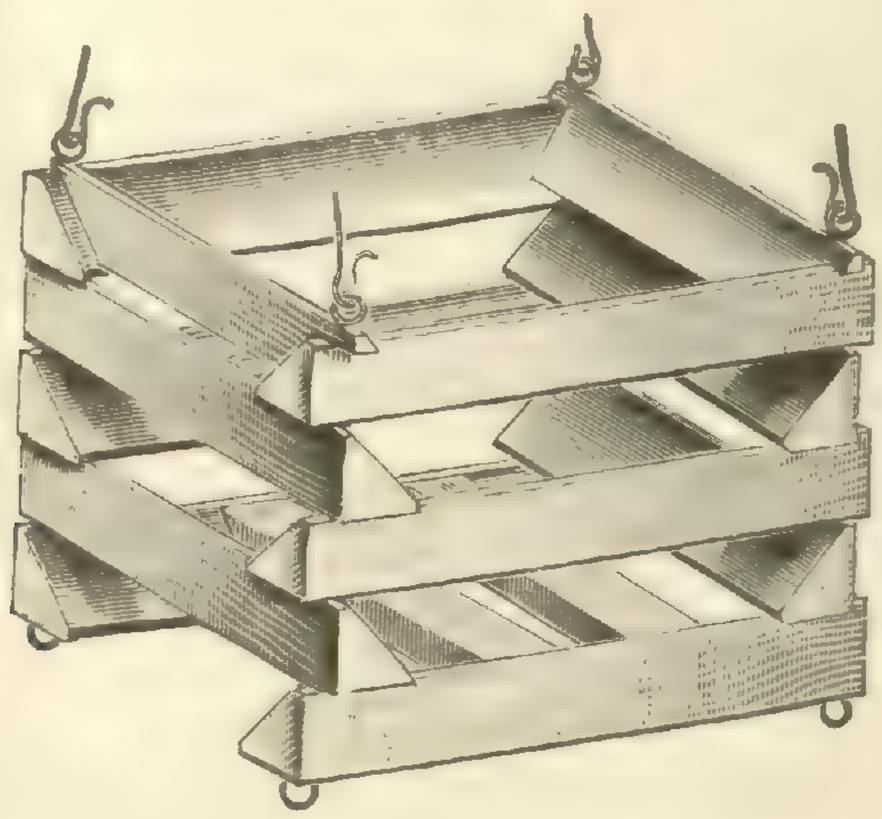

Fig. 13.—THE WEST ORCHID BASKET.

quite rigid. The bevelled edges serve to deflect the water inwards, and also give a little additional space for the compost. Basket culture is the most suitable for certain kinds of Orchids, and the improvements introduced in the present one should ensure its favourable reception by Orchid growers. The above figure, which will serve to render the preceding remarks more intelligible, has been extracted from an advertisement which appears on another page.

ODONTOGLOSSUM ANGUSTATUM AND O. CLAVICEPS.

A few plants of Odontoglossum are scattered about in various collections under the above names, though the difference between the two has never been satisfactorily made out, and a re-examination of the question in connection with specimens from the establishment of Messrs. James Veitch & Sons, of Chelsea, shows that O. claviceps is only a form of the older O.

angustatum, and not distinguishable by any well-marked character. O. angustatum was originally described in 1837, from a dried specimen collected by Colonel Hall in the valley of Lloa, near Quito, in Ecuador, at 8,000 feet above sea-level (*Lindl. Bot. Reg.*, xxiii., sub t. 1992). Nearly twenty years later it was introduced to cultivation by Mr. Lehmann, through Messrs. Hugh Low & Co., of Clapton (*see* Rchb. f. in *Gard. Chron.*, 1878, i. p. 138). O. claviceps was also introduced through the same agencies, and probably at the same time. It was described by Reichenbach from a sketch and dried materials (*Gard. Chron.*, 1876, ii. p. 516), living plants also being sent, which flowered shortly afterwards. The identity of O. angustatum has been somewhat obscured, owing to the way it has been confused with the allied O. ramosissimum, but on examination of a series of specimens it is evident that O. claviceps is synonymous, and, indeed, from the very first no clear differences were pointed out. The latter name may therefore be dropped. O. angustatum has long and narrow yellow sepals, marked with light dusky brown up the middle; curved lanceolate undulate petals, barred and spotted with light brown on a yellow ground; and a narrow lip of similar colour, with a crest of many acute teeth, which are whitish in front, and partially suffused with faint purple. The column is nearly wingless. It is an interesting species, though not one of the showy ones.

CALENDAR OF OPERATIONS FOR OCTOBER.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE prevailing fine weather during the month of September must have been most welcome to Orchid growers, for it has undoubtedly rendered them most valuable service, by assisting the plants to complete and nicely mature their pseudobulbs. At the time of writing the thermometer outside has registered as high a degree of temperature as at any time during the summer, thus enabling us to ventilate in all departments very much as one would do for hard-wooded greenhouse plants. Such are indeed glorious times for Orchids, for it is then that they thrive so well, and soon show that sturdy natural appearance which augurs well for a safe and prosperous journey through the winter months. May such weather continue, and the longer the better!

But by the time these lines appear we shall have entered upon the month of October, and if we have not then encountered colder and less genial weather, it will probably not be far away, and we must then be much more careful in the matter of ventilation, in watering and damping down, and in the temperatures generally. The thermometer must then in each division indicate a figure suitable for the autumn. The following is a guide:—

COOL HOUSE.—Day, with sun and shade, 60° to 65°; without sun, 55° to 60°; night, 55°; morning, 50° to 55°.

INTERMEDIATE HOUSES.—Day, with sun, 70° to 75°; without sun, 65° to 70°; night, 60° to 65°; morning 58° to 60°.

WARM OR EAST INDIAN HOUSE.—Day, with sun, 75° to 85°; without sun, 70° to 75°; night, 65° to 70°; morning, 65°.

Where permanent shading has been used it should now be cleaned off, and everything done to secure for the plants the maximum amount of light. Plants should be raised as near to the glass as possible, by using inverted pots or by some other means, which also allows the air to circulate round them freely. Strong specimens are by this means maintained in health, and weekly ones have a chance to recover. With the exception of the Cool house the roller blinds should now be taken down, when dry, and stored away; unless they are required as a protection against cold in winter. On the Cool house they may still be needed for a few hours during bright sunny days.

The Cool house should be ventilated freely, both night and day. Rather than close the ventilators, if the nights are cold, have a slight warmth in the hot-water pipes. If the weather is mild and no artificial warmth is required, once a day will most probably be often enough to damp down the surroundings, and let that be done during the forenoon. Should the nights be frosty, necessitating a little fire-heat, the atmosphere will dry more quickly, and damping down may be required twice a day. Much, however, depends upon the position and structure of the house. Most growers know that the majority of Cool-house Orchids like a moist atmosphere and detest a dry one, but a great mistake is sometimes made by keeping a stuffy stagnant atmosphere, although the thermometer may still register the desired degree. In such cases fungus or mildew supervenes, the tips of the leaves decay, and frequently a good deal of cutting and trimming up is required to give them a respectable appearance.

Where Cattleyas and Mexican Orchids are grown no shade should now be given. Air should be admitted as freely as the outside conditions permit, and once a day (mornings) will suffice for damping down, unless a deal of fire-heat is required. Water now with a good deal of care and discretion, for as the days shorten and become darker much less moisture is needed to keep the plants plump and healthy. Avoid droughts, however, which produce starved-looking plants with shrivelled-up pseudobulbs, for such plants rarely fully recover.

The above remarks apply equally well to other intermediate growing Orchids—such as the Oncidiums, Zygopetalums, Miltonias, Cynbidiums, Cypripidiums, &c., excepting that the majority of these, being continually in a growing condition, will require a little more water at the roots, though with these also watering should be done carefully, for nothing whatever is

gained by keeping any Orchid—whether growing or otherwise—too wet at the roots.

As more warmth from the hot-water pipes is needed in the East Indian house, twice a day for damping down will not be too often. The active growing period of most of the inmates of this department has now passed, and they will enjoy a somewhat drier atmosphere, in order to harden off the growth and to prevent damping. Air should therefore be admitted on all favourable occasions. Of course, I do not advise such an airy and dry treatment as for the Mexican Orchids, as that would quite ruin many of these warmer ones, and especially those having no pseudobulbs.

Many plants that made their growth in this house are now, on its completion, resting in the cooler temperature of the Cattleya or Mexican houses. Among these are, of course, many of the Dendrobiums. The more complete the rest the better will they flower; but do not flower them *too* well. I would advise growers not to go to extremes, and so severely rest their plants as to cause every possible flower to appear, for this is often such a strain upon the plants that years of skilful culture are required to again bring them back to health and vigour. It is much better to be content with a moderately well-bloomed plant, for such moderation is sure to end more satisfactorily in the long run. Then there are the genera Mormodes, Chysis, Cycnoches and Catasetum, which have flowered, all enjoying similar treatment.

Besides being necessary to remove some plants to cooler quarters at this season, there are also a good number that are better if transferred to warmer houses for the winter. Some of the intermediate growing kinds will be taken to the warm house, such as Miltonia spectablis and its variety Moreliana, M. Clowesii, M. cuneata, and M. Phalænopsis, also the Acinetas. Unless Cattleya Lawrenceana has been grown in the warm house, it should be taken there now, in order to hasten the completion of its pseudobulbs, as the growth is often backward. There are also several other Cattleyas, which, although growing very well with the rest, are all the better for a little extra heat during winter, such as C. Rex, C. Luedde-manniana, C. superba, C. Eldorado, C. Aclandiæ, C. intermedia, and any garden hybrid that may have descended from any of them. I should also have mentioned C. Dowiana aurea, and the name of this plant reminds me that the time is at hand when the damping of the new pseudo bulbs is to be guarded against. C. labiata, C. Warscewiczii, and sometimes C. Gaskel-liana are also liable to the same. It generally occurs after the flower spike is cut, through the portion of the stem which is left decaying, and passing down to the leaf and bulbs. This mischief may be prevented by removing entirely the old stem close to its base, together with the flower-sheath which protects it.

This is not a good season for buying newly-imported Orchids, as they

do not establish themselves nearly so readily as those arriving earlier in the summer or spring. The latter generally start to grow at once, and become nice and strong before the winter sets in; but plants imported now rarely start to grow before the following spring, and by that time they have arrived at a state of great exhaustion, from which recovery is not easy. Orchids that are imported now will therefore require careful handling. They should be potted up without delay, taken to their respective houses, and should be subjected to no rest, such as we would give established plants. The aim should be to keep them plump and free from shrivelling, thus preventing an unnecessary loss of vitality before reaction sets in. As they start to make new growth they should be given a slightly warmer temperature, and encouraged to grow quickly.

Many of what are known as intermediate Orchids also grow well in the coolest house for the summer, but it is better to remove them back during this month. I refer to such species as the Anguloas, Lælia pumila, Maxillaria venusta and M. grandiflora, Dendrobium Jamesianum, D. infundibulum and D. longicorne, Oncidium Reichenheimii and cheirophorum, Vanda Kimballiana, and others that are found to suffer if left in this house for the winter. The Masdevallias, too, are generally considered cool Orchids, but they always do better for a few degrees more warmth, and if not taken to a warmer house should be given the warmest end, especially that pretty little M. tovarensis, M. ephippium and all the species of the Chimæra section.

Let all the plants be now again gone over and well cleaned. Extra attention can now be given to this most important work, as damping down and watering will take much less time, and there is little or no repotting to be done. Time spent in cleaning and freeing the plants from their natural enemies is always well spent.

ORCHID PORTRAITS.

AERIDES HOULLETIANUM, Rchb. f.—*Rev. Hort. Belge*, Sept., p. 205, with plate.

ANGRÆCUM SESQUIPEDALE.—*The Garden*, Aug. 31, p. 159, with fig.

CATTLEYA AUREA MRS. F. HARDY.—*Journ. of Hort.*, Sept. 12, pp. 252, 253, fig. 40.

CATTLEYA × FOWLERI.—*Gard. Chron.*, Aug. 31, pp. 192, 239, fig. 47 (misnamed "Lælio-cattleya").

CATTLEYA MOSSIÆ, Hook., VAR. ALBA CŒLESTIS, *Lindenia*, t. 481, fig. 2; VAR. AMPLISSIMA, t. 482, f. 6; VAR. ARDENS, t. 482, f. 4; VAR. AUROSA, t. 482, f. 7; VAR. EXIMIA, t. 482, f. 2; VAR. IMPERATOR, t. 482, f. 1; VAR. LINDEN'S CHAMPION, t. 484; VAR. MAGENTA, t. 482,

f. 5; VAR. MIREILLE, t. 482, f. 3; VAR. REINECKEANA EXQUISITA, t. 481, f. 1.

COCHLIODA NŒZLIANA, Rolfe.—*Orchid Album*, t. 509.

CYPRIPEDIUM BELLATULUM ALBUM.—*Gard. Mag.*, Sept. 7, p. 561, with fig.

DENDROBIUM DALHOUSIEANUM.—*The Garden*, Sept. 21, p. 222, t. 1032, fig. 2; also p. 223, with fig.

DENDROBIUM DONNESIÆ.—*The Garden*, Sept. 21, p. 222, t. 1032, fig. 1.

DENDROBIUM THYRSIFLORUM.—*Journ. of Hort.*, Sept. 5, pp. 228, 229, fig. 32.

DISA × KEWENSIS.—*Gard. Chron.*, Sept. 7, p. 273, fig. 51.

LÆLIO-CATTLEYA × CHARLES DARWIN.—*Journ. of Hort.*, Aug. 29, pp. 197, 206, fig. 28.

LÆLIO-CATTLEYA × CLONIA SUPERBA.—*Gard. Mag.*, Sept. 21, p. 591, with fig.

MAXILLARIA NIGRESCENS, Lindl.—*Orchid Album*, t. 511.

MACROSTYLIS MACROCHILA, Rolfe.—*Gard. Chron.*, Sept. 21, p. 325, fig. 60.

ODONTOGLOSSUM GRANDE.—*The Garden*, Sept. 21, p. 219, with fig.

ONCIDIUM ORNITHORHYNCHUM ALBIFLORUM.—*Orchid Album*, t. 512.

ONCIDIUM SPILOPTERUM, Lindl.—*Orchid Album*, t. 510.

POLYCYCNIS LEHMANNI, Rolfe.—*Gard. Chron.*, Aug. 31, pp. 192, 245, fig. 49.

VANDA SANDERIANA.—*Gard. World*, Aug. 31, p. 839, with fig.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

AT the Royal Horticultural Society's meeting held on August 27th last at the Drill Hall, James Street, Westminster, there was a very good display of Orchids, including several striking things; one First-class Certificate, five Awards of Merits, and two Cultural Commendations being given.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), staged a group of fine things, mostly as cut flowers, to which a Silver Flora Medal was given. It contained several fine varieties of Lælio-cattleya × elegans, as Oweniæ (Lælia × Oweniæ), prasiata, excellens, and chelseensis, the latter receiving an Award of Merit. Other plants were L.-c. × callistoglossa, L.-c. × Nysa, Cattleya Rex, C. Leopoldi, C. Gaskelliana alba, C. Dowiana aurea, Dendrobium Phalænopsis, the brilliant Cypripedium × Moensii, C. × Lord Derby, and a pretty hybrid derived from C. venustum ♀ and C. philippinense ♂, a form of C. × Alfred.

C. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), exhibited two fine hybrids, each of which received an Award of Merit. These were

Lælio-cattleya × Charles Darwin (L.-c. × elegans Turneri ♀ × Cattleya maxima ♂), and L.-c. × Elstead Gem (C. bicolor ♀ × L. xanthina ♂). He also sent L.-c. × elegans Turneri and Cattleya Gaskelliana.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White) staged a small group of interesting things, including the rare natural hybrid Oncidium × hæmatochilum, O. Lanceanum, Stauropsis philippinensis, Cypripedium × Morganiæ burfordiense, a magnificent form of Catasetum Bungerothii, with a raceme of twelve flowers, the lips measuring 3¼ inches in diameter, and Dendrobium Hookerianum, the latter receiving an Award of Merit. A Vote of Thanks was accorded to the group.

E. H. Woodall, Esq., Scarborough (gr. Mr. Hughes), sent a magnificent basket of Vanda cœrulea, one of the stems bearing three racemes of large and richly-coloured flowers; a splendidly-grown plant of Odontoglossum coronarium, with a raceme of nineteen flowers; and a well-flowered example of Cypripedium × Morganiæ.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), received a Cultural Commendation for a splendid specimen of Odontoglossum Uroskinneri, bearing two spikes, each with about seventeen flowers and buds.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins) sent Aëranthes grandiflorus, which received a Botanical Certificate, and a rather peculiar form of Catasetum fimbriatum.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), sent a good Lælio-cattleya × elegans Turneri, and a fine form of L.-c. × callistoglossa, said to have been raised from the reverse cross to the original.

H. Shaw, Esq., Ashton-under-Lyne (gr. Mr. Cliffe), sent a raceme of the rare Mormodes tigrinum, and a hybrid Cypripedium derived from C. Boxallii atratum ♀ and C. Lawrenceanum ♂, which must be considered as a form of C. × Thayerianum.

Messrs. James Veitch & Sons, Chelsea, staged a small group of fine things, to which a Silver Flora Medal was given. It contained some good plants of Cattleya Dowiana, C. Eldorado alba, Lælio-cattleya × Proserpine, Miltonia vexilleria superba, fine examples of Grammatophyllum Rumphianum and Vanda Sanderiana, Cypripedium tonsum, C. × Charles Canham, C. × warnhamense, C. × œnanthum superbum, and the new Cœlogyne Veitchii (Rolfe) with drooping racemes of snow-white flowers, the latter receiving an Award of Merit.

Messrs. F. Sander & Co., St. Albans, received a Silver Banksian Medal for a good group, including, among others, Habenaria carnea and its variety nivosa, Miltonia vexillaria rubella, Rodriguezia pubescens, Aganisia ionoptera, some good forms of Dendrobium Phalænopsis, D. cruentum, D. bracteosum, Masdevallia gemmata, Oncidium Forbesii and

O. Jonesianum, Odontoglossum × Coradinei, two plants of the beautiful Cattleya × Fowleri, a beautiful variety of Cattleya Dowiana with sulphur-white sepals and petals, to which latter a First-class Certificate was awarded.

Messrs. Hugh Low & Co., Clapton, exhibited a small group of good things, including Cypripedium Charlesworthii, Bulbophyllum Dearei, a very fine Odontoglossum Harryanum, Lælio-cattleya × elegans, Oncidium × Gardneri, Catasetum atratum, Dendrobium speciosissimum and D. strongylanthum. A particularly interesting feature was a couple of plants of Cycnoches chlorochilon, one with two male flowers, and the other with two females, the chief difference residing in the very different columns.

Messrs. W. L. Lewis & Co., Southgate, also staged a neat group, containing the charming little Cypripedium × Evenor, C. Charlesworthii, C. Godefroyæ, Miltonia spectabilis virginalis, Odontoglossum Lindleyanum, Oncidium olivaceum, Habenaria Susannæ, Dendrobium ciliatum, Cattleya Warscewiczii, &c.

Messrs. B. S. Williams & Son, Upper Holloway, sent the rare and pretty Pachystoma Thomsonsianum and Odontoglossum Krameri.

A few Orchids were exhibited at Chiswick Gardens on Sept. 5th, in connection with a special meeting which was announced only a few days previously.

Messrs. James Veitch & Sons, Chelsea, sent several very fine things. Lælio-cattleya × Clonia on this occasion received a First-class Certificate, and L.-c. × Parysatis an Award of Merit. L.-c. × Eunomia (L. pumila Dayana ♀ × Cattleya Gaskelliana ♂) and Cypripedium × Carnusianum also each received an Award of Merit. The group also included Cypripedium Charlesworthii with two lips, C. × Metis (C. Boxallii ♀ × C. philippinense ♂), and Lælio-cattleya × Nysa.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, received a Botanical Certificate for the very distinct Maxillaria striata.

A. H. Milton, Esq., Castleton House, Clifton (gr. Mr. Murrell), sent Oncidium Jonesianum and Odontoglossum Insleayi splendens.

A. H. Smee, Esq., The Grange, Wallington (gr. Mr. Cummins), sent a light and pretty form of Cattleya × Hardyana.

CORRESPONDENCE, &c.

W. H. S., Northwich. Epidendrum fragrans.
H. T. C., New Jersey. Bollea near B. Whitei, but too far gone.
H. V. W. V., Singapore. Dendrobium Leeanum. Many thanks. See next month.
Photographs received, with thanks. E. H. W., J. B. P., W. C. C., A. W. H.
E. S. B., Southampton. We consider it a variety of Cypripedium × luridum.

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

VOL. III.] *NOVEMBER*, 1895. [No. 35.

NOTES.

Two meetings of the Royal Horticultural Society will be held during November, on the 12th and 26th respectively, when the Orchid Committee will meet at the usual hour of 12 o'clock noon. At these meetings and throughout the winter exhibits may be removed at four o'clock.

A supplement to the *Gardeners' Chronicle* for October 12th shows a group of three splendid Cattleyas from the collection of Sir Trevor Lawrence, Bart.—C. Lawrenceana, C. Schrœderæ, and C. Mendelii. The first-named is the magnificent specimen to which a Silver Flora Medal was awarded by the Royal Horticultural Society on April 9th last, a well-merited compliment to Mr. W. H. White. The plant measured three feet across, and bore thirteen spikes, the best having eleven flowers.

A fine flower of Cattleya Dowiana chrysotoxa comes from the collection of G. H. Rolls, Esq., of Bournemouth. The sepals and petals are clear yellow, and the lip uniformly rich purple-crimson, with the golden-yellow nerves not extending quite to the apex. It is from a recently-imported plant.

This species has been flowering very finely in the collection of R. Brooman White, Esq., of Arddarroch, under the care of Mr. Roberts, over a hundred flowers having already expanded, while many others were still in bud. It would appear that the fine weather of the past season has been specially favourable to the growth of this handsome species.

There is a form of Lælia tenebrosa in several collections which is exceptional both in size of flower and in richness of colouring, which

may be distinguished as variety superba, as it only differs from the type in these respects. A fine three-flowered raceme has just been received from the collection of T. Statter, Esq., of Whitefield, Manchester.

Three curiously abnormal flowers have been received from the collection of T. W. Swinburne, Esq., of Cheltenham. A flower of Cypripedium insigne has two staminodes, the usual dorsal one and one lateral one, the remaining lateral one being a normal anther. The stigma and dorsal sepal are quite normal, while the remaining organs, the lower sepals, petals, and lip are curiously united into two organs, so that their original limits can with difficulty be made out. A flower of C. × selligerum has the two lateral sepals free, and the lip turned completely inside out. The third flower is Selenipedium × Sedeni, and in this the two petals are united, and take the place of the dorsal sepal, opposite to which is a single perfect anther replacing the staminode. The lip is normal, and is clasped by an unusually large concave organ apparently composed of the united sepals. The stigma is abortive, and the normal anthers suppressed. Some of these malformations throw considerable light on the complex structure of an Orchid flower.

A fine two-flowered inflorescence of Cattleya Dowiana superba comes from Messrs. F. Sander & Co., St. Albans. The petals are over $2\frac{1}{8}$ inches broad, and the lip over $2\frac{1}{2}$ inches. The segments are clear yellow, and the lip yellow at the sides and rich crimson in front. It is exceptionally fine.

Cattleya labiata Sanderiana is also enclosed, and is characterised by the very bright rose colour of the sepals, petals, and side lobes of the lip. It is typical in other respects.

Cattleya labiata superba is a richly coloured variety of exceptional size, which exists in several collections. A flower from J. Gurney Fowler, Esq., S. Woodford, has both the petals and lip rather over $2\frac{1}{4}$ inches broad, and is perfect in form and colour.

A flower of Cypripedium × Marriottianum has been received from Sir William Marriott, Down House, Blandford. It approaches C. × microchilum in shape and colour, but the median purple line of the dorsal sepal and petals is narrower and paler in colour. Its parentage is not certainly known.

We have received from Mr. W. J. Robertson, The Gardens, Ardenholm, Maghull, Cheshire, a very beautiful form of Cattleya × Hardyana with white sepals and petals. The lip is very similar to the typical form in colour, and the contrast is very striking. It may be called C. × Hardyana alba.

DIES ORCHIDIANÆ.

In the *Orchid Review* for June last, I dropped across a curious little note:—"We cannot express any opinion respecting a plant which we have not seen, but you may take it as certain that Cattleya floribunda is not a natural hybrid . . . We shall be able to tell you more about it some day; meantime you must use your own discretion as to its novelty." Here was something to keep an eye on. I had seen the announcement of "the most marvellous new Orchid of recent years," and how it gave immense and easily understood satisfaction to announce to Orchid cultivators that the desire expressed that this wonderful introduction should be placed in commerce at once, without waiting until it flowered—when its reputation would have been at once established—could not be resisted. I had also observed that it was to "cause a sensation in the Orchid world." Its flowering season was from September to December, so fortunately there would not be long to wait. Four months elapse; the sheath bursts; the buds swell; the eventful moment at length arrives when the flower expands, and reveals—Cattleya maxima!

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Some time ago (II., p. 99) I had occasion to mention Grammatophyllum Guilielmi secundi and Dendrobium Augustæ-Victoriæ—by the way I see from the July issue of the *Review* that both have come to grief—but now we have a "Miltonia Empress Augusta Victoria" (*Gard. Chron.*, Sept. 28, p. 360), which I confess I don't quite understand. My first impression is that it must be a species, and I mentally exclaim, "surely our species are not also to be named in the vernacular," but glancing down I note that "the divisions are more pointed than those of the type," so it cannot be a species after all. Now I want to know what the type is. I suppose there was no room for that, and when it takes three names to indicate the variety there is naturally not much room left for anything else, and one must not expect too much. The line must be drawn somewhere, even if the specific name has to be left out. Then there is another little difficulty. The flower is "over 4 inches in height by $3\frac{1}{2}$ inches across," but as the "two lateral sepals are each 4 inches long"—that is each as long as the whole flower—I can only endorse Mr. Ch. De B.'s further remark that it is "of unusual habit."

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A week later (p. 391) I find "Cypripedium Bolerlaerianum × (C. Dauthieri × C. Harrisianum) flowering for the first time: the blossom large and good, with a fine standard, resembling greatly that of C. Harrisianum." Now considering that C. × Harrisianum and C. × Dauthieri are identical in their parentage the latter remark will hardly be called in question. It must be something like C. olivetense—a so-called hybrid between C. barbatum and C. b. Warnerianum—in requiring a microscope to find out its differences.

The whole thing is beyond my comprehension, and I can only ask again, Where are we going?

In your September issue I called attention to the announcement of a series of so-called new varieties of Cattleya Mossiæ, and these have since been described and a few of them figured in *Lindenia*. The *Gardeners' Chronicle* for October 5th, thus comments on the subject (p. 388):—"As it is clear that accurate lines of demarcation and classification cannot be drawn for these individual forms, is it not desirable to call them all—as some are already—by names such as Quetelet, Crépin, Dumortier, Morren, Spring, Kickx, Van Beneden?" To this query I would unhesitatingly answer No! The number of "individual forms" of Cattleya Mossiæ in cultivation can be counted by the hundred, and my deliberate opinion is that it is not desirable to call them all by names, even in the vernacular, which is what the suggestion practically amounts to, if it means anything at all. What is the use of naming multitudes of so-called varieties which can neither be distinguished nor classified? The same range of variation appears in every importation of Cattleya Mossiæ, and many of the so-called new varieties above alluded to cannot be distinguished from the old ones—indeed, no attempt is made to distinguished them. It is a complete farce to name varieties after this fashion, and the fault lies in the system, not in the particular name applied. What we want is some method of classifying the different variations which occur under their respective types, not a mere multiplication of so-called varieties which can neither be distinguished nor classified, which will only make confusion worse confounded.

ARGUS.

CATASETUM CHRISTYANUM.

A very curious form of Catasetum Christyanum has just appeared in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, on a plant which last year produced a raceme of the well-known male flowers. On this occasion the raceme bore two flowers which are in a curious transition state between the two sexes. They differ from the males (*Orchid Album*, ii., t. 83) in having the sepals and petals equally spreading, the latter marbled with a rather lighter shade; the lip with a greenish-yellow, nearly flat limb, which is entire except for the short purple marginal hairs: the sac nearly an inch deep; and the column shorter and much stouter, with partially developed stigma and imperfect anther. The colour was not much altered. The antennæ were much shorter than usual, but retained their function, as when touched the stipes and pollinia were ejected with some force. The pollinia were very small and not attached to the stipes. The female, I believe, is not yet known.

R.A.R.

HYBRID ODONTOGLOSSUMS.

(*Continued from Vol.* II., *page* 330.)

Our last paper concluded the hybrids from the Ocaña district, and we may now consider those from the Andes of Ecuador, where several species occur, and where, as at Bogota and Ocaña, some of them grow intermixed.

The four Ecuadorean species from which hybrids have been derived are O. cristatum, Lindl., O. cirrhosum, Lindl., O. Hallii, Lindl., and O. Kegeljani, E. Morr. (O. polyxanthum, Rchb. f.), and at least eight different forms have been described, which apparently belong to five different crosses, as shown in the following diagram :—

O. cristatum ... ...
× 13
O. cirrhosum ... ... × 15
× 14 × 16
O. Hallii ... ...
× 17
O. Kegeljani ... ...

The three species first named have all been collected in the Loxa district. O. cirrhosum has rather an extensive range on the western Cordillera, for, according to Lehmann, it ranges between 4° S. latitude and 2.15° N., from Loxa northwards. O. Hallii extends from about Loxa up to Quito, close to the Equator, and possibly further north, at about 8000 feet altitude. The distribution of O. cristatum is very imperfectly known, but Hartweg collected it in the Loxa district, and it also grows with O. Kegeljani (polyxanthum), some distance further north, and has even been reported from as far north as Popayan, so that its range is probably not inconsiderable. The habitat of O. Kegeljani has also not been very exactly indicated, as far as I have discovered, but for the present purpose it may be roughly indicated as somewhere between Loxa and Quito, as we have now evidence that in some locality it grows in company with O. Hallii. It is probably less widely diffused than that species. We may now consider the hybrids individually :—

13. Odontoglossum × cirrhoso-cristatum.—This hybrid originally appeared in the collection of W. Marshall, Esq., of Enfield, and was described and figured by Reichenbach in 1870 as O. × himnus. It was compared with O. luteo-purpureum and O. gloriosum, which the author, probably unaware that it came from Ecuador, apparently considered might be the parents. A year later a plant flowered in the collection of J. Day, Esq., when Reichenbach pointed out the resemblance in the lip to O. cristatum. A fine inflorescence sent to Kew by Baron Schröder in June, 1891, shows an unmistakable combination of characters derived from O. cirrhosum and O. cristatum, the former being well represented in the shape

of the segments, and the latter in the modified colour and other characters.

What I believe to be another form of the same hybrid appeared in the establishment of Messrs. James Veitch & Sons, of Chelsea, in 1871, among masses of O. cirrhosum, and was described by Reichenbach as O. × elegans. It was described as having a branched panicle, and flowers much resembling O. cirrhosum, but nearly covered with brown blotches on the segments. The keels of the lip also showed characters apparently derived from O. cristatum. Reichenbach described it as "one of those quasi-meteoric rarities," and concluded with the query, "Is it a mule between O. cristatum and cirrhosum?" This is the original O. × elegans, but a second plant of the same name belongs to the next hybrid. Another plant appeared with Messrs. F. Sander & Co., in 1880.

A fine inflorescence sent from the collection of D. Tod, Esq., Giffnock Park, Glasgow, in November, 1892, as O. × elegans, is very similar in structure, but has fewer and smaller spots on the light yellow ground, and thus approaches O. cirrhosum a little more nearly than the preceding.

Another which I believe to be a form of this hybrid appeared in the collection of H. M. Pollett, Esq., Fernside, Bickley, in 1890. It is a little nearer to O. cristatum in shape than the preceding forms, and is about intermediate in colour, being blotched with chocolate on a light yellow ground.

The following are references to the published descriptions and figures of this hybrid:—

Odontoglossum × hinnus, *Rchb. f. Xen. Orch.*, II. p. 153, t. 160, fig. 3; id. in *Gard. Chron.*, 1871, p. 902.

O. × elegans, Rchb. f. in *Gard. Chron.*, 1879, i., p. 462.

O. × elegans var., *Pollett Cat. Fernside Coll.*, 1893, p. 14, n. 198, t. 3, fig. 138.

14. Odontoglossum × cirrhoso-Hallii.—The hybrid well-known in gardens as O. × elegans, which I believe is not the original plant of that name, is generally considered to be a natural hybrid between O. cirrhosum and O. Hallii, between which it is precisely intermediate, but there are two older hybrids which I believe are descended from the same cross, namely O. × Marriottianum and O. × Victor, and these have almost or quite been lost sight of.

Odontoglossum × Marriottianum appeared among masses of O. cirrhosum in the establishment of Mr. G. Marriott, Exotic Nursery, Edmonton. Reichenbach described it as one of the most difficult things he had ever had, just fit to make him despair of himself or of Nature, or of both. "I have considered it for a month," he added, "and feel as ignorant as before. I cannot guess its descent." Finally, he concluded with the query—"How would a hybrid between O. Hallii and O. crispum come between masses of O. cirrhosum"? From his remarks it is quite evident

that O. Hallii was one parent, as the characters of that species come out strongly, both in habit and in the details of the flower. But it is equally certain that O. crispum is out of the question, for it does not grow anywhere near this district, and if it did the resulting hybrid would be much nearer that called O. × Wilckeanum. O. × Marriottianum, however, has stellate flowers with acuminate sepals and petals, which are whitish yellow spotted with purple, and a yellow crest to the lip streaked with purple. Although I have not seen this plant, I believe that O. cirrhosum was the other parent, for this alone of the Ecuadorean hybrids would account for the characters given. It would appear that the characters of O. Hallii predominate.

In 1882 the plant which is now known in gardens as Odontoglossum × elegans appeared in the collection of H. M. Pollett, Esq., Fernside, Bickley. It received a First-class Certificate from the Royal Horticultural Society on May 8th, 1882, the plant then bearing four racemes and an aggregate of fifty-four flowers. About a year later it was described by Reichenbach as O. × elegans Mr. Pollett's variety. The author pointed out how it differed from the original type, and indicated its affinity with O. Hallii, which I believe arises from its different parentage. It was purchased by Mr. Pollett as O. Hallii. There can be no doubt that this well-known plant is descended from O. cirrhosum and O. Hallii.

In 1883 Reichenbach also described a hybrid under the name of Odontoglossum × Victor, stating that it had appeared in 1868 with M. J. Linden, who had received it from Wallis, and that it had not been seen again until this period, when it re-appeared with Mr. W. Bull, of Chelsea. He pointed out its affinity to O. × Marriottianum, and so far as I can tell from the description it is probably descended from the same two species.

Odontoglossum elegans Sander's variety is a large form with smaller spots, which appeared with Messrs. F. Sander & Co., and received an Award of Merit from the Royal Horticultural Society on March 27th, 1894. It is much nearer to O. cirrhosum than to the other parent, which was probably O. Hallii.

The following are the references to descriptions and figures of this hybrid :—

Odontoglossum × Marriottianum, Rchb. f. in *Gard. Chron.*, 1881, i., p. 168; *Veitch Man. Orch.*, i., p. 75.

O. × Victor, Rchb. f. in *Gard. Chron.*, 1883, i., p. 532.

O. × elegans Mr. Pollett's variety, Rchb. f. in *Gard. Chron.*, 1883, i., pp. 720, 721, fig. 118. O. × elegans, T. Moore in *Orchid Album*, iii., t. 111; *The Garden*, xxvi., p. 276, t. 459; *Veitch Man. Orch.*, i. pp. 72, 73, with fig.; *Pollett Cat. Fernside Coll.*, 1891, p. 8, n. 178, t. 7, fig. 244; *Pollett l.c.*, 1893, p. 7, n. 94, t. 4, fig. 100.

O. × elegans Sander's variety, *Gard. Chron.*, 1894, i., pp. 409, 441, fig. 55.

15. ODONTOGLOSSUM × CRISTATO-HALLII.—This hybrid is only known

to me from description. It appeared in the establishment of Messrs. F Sander & Co. some years prior to 1883, but was not described until that year, when it re-appeared in the collection of E. Salt, Esq., of Shipley, near Leeds, and was described by Reichenbach under the name of Odontoglossum × chætostroma. It was imported with O. Hallii, and bore a raceme of sixteen flowers. It was described as near the last named, but with more stellate flowers, the sepals and petals being narrower, and densely covered with dark blotches, and the lip and column most resembling O. Hallii. Reichenbach asked—"Is it a mule between Hallii and cristatum?" And judging by the description this seems highly probable, as it is clearly different from the two preceding hybrids.

The following are the references:—

Odontoglossum × chætostroma, Rchb. f. in *Gard. Chron.*, 1883, i., pp. 562, 592.

16. ODONTOGLOSSUM × CRISTATO-KEGELJANI. — In 1878 a curious Odontoglossum appeared in the establishment of Mr. W. Bull, of Chelsea, which Reichenbach described under the name of O. × cristatellum, stating that it was probably a natural hybrid between O. cristatum and some species like triumphans or epidendroides. Then a plant appeared with Mr. Oscar Schneider, of Fallowfield, near Manchester, and another with Mr. Buchan, of Southampton, when Reichenbach spoke of it as one of the best marked and rarest of hybrids. Still later it appeared with Messrs. Hugh Low & Co., and in the collection of R. H. Measures, Esq., of Streatham, when Reichenbach again remarked on its rarity and compared it with O. luteopurpureum. Since then it has appeared in various other collections among importations of O. Kegeljani (polyxanthum), which is evidently one of the parents. In fact it shows an unmistakable combination of the characters of this species and O. cristatum, sometimes approaching more nearly to one parent, and sometimes to the other. O. triumphans and O. luteopurpureum do not grow in this district at all, and are clearly out of the question.

In the same year in which Odontoglossum cristatellum appeared, a so-called species from Ecuador was described by Reichenbach under the name of O. Lehmanni, but four years later the author reduced it as a synonym of O. × cristatellum.

The following are the references to descriptions and figures of this hybrid:—

Odontoglossum × cristatellum, Rchb. f. in *Gard. Chron.*, 1878, ii., p. 716; id., 1882, i, p. 143; 1887, i, p. 126, 746; *Orchid Album* ii., t. 66. O. cristatum var. cristatellum, *Veitch Man. Orch.*, i., p. 32.

O. × Lehmanni, *Rchb. f. Otia Bot. Hamb.* (1878), p. 4; id. in *Gard. Chron.*, 1882, i., p. 143 (in note).

ODONTOGLOSSUM × HALLIO-KEGELJANI. —This hybrid, which has ap-

peared on two different occasions, is only known to me by description and a coloured figure. It originally appeared in the collection of M. Dallemagne, of Rambouillet, early in 1894, when it was described under the name of Odontoglossum × Impératrice de Russie. It is said to be intermediate between O. Hallii and O. Kegeljani, both in shape and colour.

A little over a year later it appeared at L'Horticulture Internationale, Brussels, and was figured and again described as new, under the name of O. × Hallii-xanthum. It is said to have flowered out of an importation from Ecuador, and to be unmistakably intermediate between the two species above named. The sepals and petals are less acuminate than in O. Hallii, and the ground colour more yellow with fewer spots. In the details of the lip and column it approaches most nearly to O. Hallii.

The following are the references :—

Odontoglossum × Impératrice de Russie, L. Lind. in *Journ. des Orch.*, iv., p. 360.

O. × Hallii-xanthum, L. Lind. in *Lindenia*, x., p. 73, t. 467.

So far as I am aware, no hybrid has yet appeared between O. cirrhosum and O. Kegeljani, though if the two species grow anywhere intermixed such a plant may some day occur. It is the only other possible combination between the four Ecuadorean species above mentioned.

R. A. Rolfe.

ONCIDIUM ONUSTUM.

This extremely rare and very pretty Oncidium has just flowered in the collection of W. Thompson, Esq., Walton Grange, Stone. It has clear bright yellow flowers an inch in diameter, which are borne on an arching raceme about a foot long, the flowers being all turned to one side, somewhat as in Rodriguezia secunda. It was originally described by Lindley in 1833 from dried specimens collected by Cuming (*Lindl. Gen. and Sp. Orch.*, p. 203), and on its appearance in cultivation in 1861, in the collection of Herr Borsig, at Moabit, near Berlin, was re-described by Reichenbach under the name of Oncidium holochrysum (*Hamb. Gartenz.*, xviii. p. 33). Shortly afterwards Dr. Krause collected it for Messrs. Backhouse & Son in Ecuador, where it had previously been found by William Lobb. This is probably its native habitat, as, although Cuming's specimens were localised "Panama and Western Columbia," it is known that some of his plants came from further south. It technically belongs to the section Equitantia, which is not well named, as the leaves of some species are not equitant. The column wings are falcate, erect, and longer than the column, and the crest of the lip broadly oblong, nearly flat, and with a couple of thin erect plates in front. It is very free flowering, and a really handsome little plant.

R. A. R.

AN IDEAL CYPRIPEDIUM LIST.

The paper in your last number, by Mr. E. H. Woodall, of Scarborough, under the above title, appears to me a remarkably good one, and most of the writer's remarks I cordially endorse. With your permission, however, I should like to say a word or two in favour of Cypripedium bellatulum and its hybrids. I acknowledge at once that I have seen this species exhibited at flower shows in such a way that probably few lovers of beauty in form or colour would accord more than a modicum of praise. To do Cypripedium bellatulum justice, I think it should be grown in hanging baskets, and as thus seen I believe most Cypripedium growers would consider it worthy of a high place in any ideal list. It does not appear to be suitable to be placed upon the ordinary stage and so looked down upon, but should be hung slightly above the level of the spectator's eye.

With regard to "bellatulum" hybrids, I regret to say that my knowledge of them is chiefly confined to pictures and descriptions, but surely the Orchid Committee of the Royal Horticultural Society had some adequate reason for bestowing First-class Certificates on Cypripedium × Southgatense, × Lawrebel, × Charles Richman, × Arnoldiæ, × Annie Measures, × Leysenianum, and × Gertrude Hollington, and Awards of Merit on C. × Evenor, × William Lloyd, × Mrs. Fred Hardy, × Olenus, and × Fowlerianum.

In compiling an ideal list, I am afraid I should have found it difficult to leave out such species as superbiens, Sanderianum, and ciliolare (best forms) and the hybrids × vexillarium superbum, and × œnanthum superbum, but perhaps Mr. Woodall, if he had extended his list, would have included these. What, too, about Cypripedium Fairieanum?

REGINALD YOUNG.

CATTLEYA ELONGATA.

A beautiful variety of Cattleya elongata has appeared in the collection of H. Little, Esq., The Barons, Twickenham, in which the sepals and petals are deep rose-purple, the front lobe of the lip bright rose, and the side lobes deep blush-pink. It is the variety rosea, formerly known as C. Alexandræ rosea. A variety maculata, with green sepals and petals spotted with purple brown, has also flowered, among other forms, in the establishment of Mr. H. A. Tracy, of Twickenham. It has the narrow undulate petals of the type, as well as the elongated scape. Messrs. Sander send a flower in which the side lobes of the lip are as bright rose as the front lobe, though it is quite typical in other respects. The species is evidently variable in colour. We have not yet heard of a plant with anything like the number of flowers seen in the wild specimens.

MILTONIA × LAMARCHEANA.

Two plants of this distinct and handsome natural hybrid were exhibited at the Royal Horticultural Society's meeting on October 15th, from the collections of Walter Cobb, Esq., and of S. G. Lutwyche, Esq. It originally appeared in the collection of M. Lamarche de Rossius, President of the Société Royale d'Horticulture de Liege, in August 1874, and two years later was figured and described by Professor E. Morren, as Miltonia Clowesii var. Lamarcheana (*Belg. Hort.*, xxvi, p. 174, t. 13). It was received direct from the province of Minas Geraes, in 1873. Some years later Reichenbach received a specimen from the collection of M. Massange de Louvrex, of Liège, when he changed the name as above, stating "my opinion is that the plant may be a mule between M. candida and M. Clowesii," in which he was evidently correct. In 1893 what is certainly the same cross appeared in the collection of Major Joicey, Sunningdale Park, and was re-described by Mr. J. O'Brien under the name of M. × Joiceyana (*Gard. Chron.*, 1893, ii., p. 206). It received a First-class Certificate from the Royal Horticultural Society on August 8th, 1893. Some time later a plant appeared with Messrs. Charlesworth & Co., Heaton, Bradford, and now the above additions have to be recorded. The sepals and petals are much like those of M. Clowesii, both in shape and colour, but the lip is about twice as broad, flat, light purple on the basal half and white in front. Mr. Lutwyche's plant showed a distinct trace of the concave lip of M. candida. The few known plants of this handsome hybrid have appeared among importations of the parent species, and when plants are so rare there is a considerable danger of their receiving a different name at each time of their appearance.

R. A. Rolfe.

ONCIDIUM SPILOPTERUM.

Some interesting remarks respecting this striking but much confused species appear in the last number of the *Orchid Album*, where it is well figured at t. 510, and it seems desirable that its history should now be completed. It originally appeared in the collection of Messrs. Loddiges, of Hackney, by whom it was imported from Brazil, and was described by Dr. Lindley in 1844 as O. spilopterum (*Bot. Reg.*, xxx., *Misc.*, p. 75). Its affinity was said to be with O. Lanceanum and O. carthaginense. Immediately afterwards it was again described by Prof. Charles Morren, under the name of O. gollopavinum (*Ann. de Gand.*, i., p. 13, t. 1), from a plant which flowered in the establishment of M. Ambrose Verschaffelt, said to have been imported from Mexico, a statement which Lindley adopted when figuring the plant, a year after his original description appeared (*Bot. Reg.*, xxxi., t. 40), though it has since proved erroneous. Lindley then

remarked that it naturally stood near O. reflexum and the allied Mexican species. Some ten years later Lindley reduced it as a variety of O. Batemanianum (O. B. spilopterum, *Lindl. Fol. Orch., Oncid.*, p. 52), which was extremely unfortunate, as that species is a member of another group. Had the plant remained in cultivation it is probable that the mistake would sooner or later have been detected, but it was soon almost or quite lost sight of, and when in 1892 it did re-appear it received a new name. In that year it flowered with Messrs. F. Sander & Co., St. Albans, having been introduced from South Brazil by M. Vicomte de St. Leger. I immediately saw that it belonged to Lindley's group Tetrapetala micropetala, being allied to O. bifolium, and as the group contained no species like it I re-described it under the name of O. Saintlegerianum (*Gard. Chron.*, 1892, ii., p. 582). It is rather curious that I did not detect Lindley's error at the outset, because on first seeing Messrs. Sander's plant I immediately thought of the figure of O. spilopterum, but on looking up the books and finding that Lindley had ultimately made it a variety of O. Batemanianum, belonging to a different group, I thought that the two must be different, even after Mr. J. O'Brien recorded his suspicions to the contrary (*Gard. Chron.*, 1893, i., pp. 10, 194, 227). Examination of Lindley's type specimen, however, confirms the identity of O. Saintlegerianum with O. spilopterum, and also its distinctness from O. Batemanianum, as above pointed out. It is a decidedly handsome species, and very unusual in its brilliant contrast of crimson and yellow. Particulars of its habitat have already been given in these pages (Vol. I., p. 6).

R. A. R.

AN AMATEUR'S NOTES.

The first flowers of Cattleya labiata announced the advent of autumn, and now this brilliant acquisition is flowering in full force. It is wonderful how variable it is, especially in colour, and I have been a little interested in looking up one or two of the original figures, and have succeeded in finding almost an exact match among recent introductions. There is not the slightest doubt that we have now the long-lost plant, and in quantities never seen before. The only other Cattleya coming on in quantity is C. Bowringiana, and this is just opening out splendidly. The flowers are rather small, but they make up in quantity what they lack in size, and the plant grows with the utmost freedom. Still it is a little overshadowed by its brilliant compeer.

The autumn Cypripediums are coming on well. C. Spicerianum is out, side by side, with its new and brilliant ally, C. Charlesworthii, whose flowers are not so lasting, but are much more variable both in shape and

colour. Several flowers of C. insigne have now expanded, and by the time these notes are in print there will be quite a show of this fine old plant. C. × Leeanum and several other of the hybrids are coming on well. C. × Arthurianum and C. × vexillarium are both out. The shape and markings of the former I greatly admire, but the latter has an unpleasant way of tucking its petals down close to the side of the lip which detracts from its beauty. Somehow I fancy these two would be worth crossing together. Such a hybrid would be half C. Fairieanum, and the colour of C. barbatum and the good constitution of C. insigne ought to render such a combination almost an ideal one. C. × œnanthum superbum is always beautiful, and C. × Niobe an exquisite little plant just now expanding.

Those charming little plants Pleione maculata and P. præcox just now make the house gay with their brilliant flowers, which are unfortunately all too fleeting. Sophronitis grandiflora too is out, and will continue to brighten up the house right through the dull season. It is easily grown and requires little room.

One other group of plants I must mention, namely, the Oncidiums, which are now flowering in great force. O. crispum and O. Forbesii are simply magnificent in their great panicles of brilliant flowers. O. varicosum and its larger variety Rogersii are also very fine, and several others are equally promising. A word I would say about the culture of these beautiful plants is—Don't grow them too hot.

AMATEUR.

NOVELTIES.

CATASETUM HYMENOPHORUM, Cogn.—A species allied to C. chloranthum, Cogn., which flowered in the establishment L'Horticulture Internationale, in July last. The flowers are yellowish green.—*Lindenia*, xi., p. 14.

BULBOPHYLLUM CARINATUM, Cogn.—A Bornean species allied to B. reticulatum, Batem., which flowered in the same establishment as the preceding, in July last.—*Lindenia*, xi., p. 20.

ODONTOGLOSSUM ASPIDORHINUM, Lehm.—A Columbian species, growing on trees in dense forests on the eastern declivities of the western Andes of the Cauca, at 2,200-2,500 metres above sea level. Its affinity is not stated, but it appears to be nearly allied to O. constrictum, Lindl. It is said to be the most floriferous species known, as the bulbs flower for two or three years in succession, a character not previously observed in Odontoglossum.—*Gard. Chron.*, Sept. 28, p. 356.

DENDROBIUM × LEEANUM.

Four years ago a remarkable Dendrobium flowered in the establishment of Messrs. F. Sander & Co., St. Albans, and was described by Mr. J. O'Brien as a handsome new species, under the name of Dendrobium Leeanum (*Gard. Chron.*, 1891, ii., pp. 640, 641, fig. 88). It was a single plant which flowered out of an importation of D. Phalænopsis, and received an Award of Merit from the Royal Horticultural Society, on November 10th, 1891. On seeing it I immediately suggested that it might be a hybrid between D. Phalænopsis and D. superbiens, as it was about intermediate in character. Soon afterwards a second plant appeared in the collection of F. Wigan, Esq. (now Sir Frederick), Clare Lawn, East Sheen, and now one has flowered with H. V. W. Vade, Esq., of Singapore. Other plants may possibly be known. I now feel more than ever convinced that it is a natural hybrid between the two species just named. It is a tall plant with pseudobulbs about 3 feet high, and long racemes of flowers, like the two species in question. It also combines the characters of the two. The sepals are acute, as in D. Phalænopsis, but rather narrower, and the petals spathulate-oblong, rather longer and more acute than in D. superbiens. The lip is about intermediate in size and shape, including the details of the crest. In D. superbiens the crest consists of three serrulate erect keels at the base of the front lobe, but in D. Phalænopsis the disc is simply puberulous without any crest. D. × Leeanum has a crest as in the former, but is reduced to about half the size. The sepals and petals are whitish at the base, but rosy purple above, and the lip is pretty similar. Sir F. Wigan's plant has the flowers of a darker, nearly uniform shade, and has been called variety atropurpureum. Mr. Vade's plant is like the original one, as is shown by a photograph and a note of the colour. He also points out the resemblance to D. superbiens. I do not know whether plants of the latter have flowered out of the importations of D. Phalænopsis, but it is now pretty evident that the two grow together, and that D. × Leeanum is a natural hybrid between them. Its appearance is therefore very interesting.

R.A.R.

OBITUARY.

We regret to hear of the death of Mr. James Crispin, F.R.H.S., head of the firm of James Crispin & Sons, Horticultural Engineers, of Nelson Street, Bristol, on October 14th last, after a prolonged illness, at the age of fifty-five years. Mr. Crispin was a very successful grower of Orchids, and his collection at Chester Park, Fishponds, was well known in the West of England. On two occasions he was awarded the Banksian Medal of the Royal Horticultural Society, and he frequently took first prizes at local Flower Shows.

MASDEVALLIA TRINEMA.

In Miss Woolward's work, *The Genus Masdevallia*, I note the remark by Consul Lehmann — "Masdevallia Lowii, Rolfe, is identical with M. trinema, Rchb. f.," to which Miss Woolward adds that Consul Lehmann "has had the advantage of examining Professor Reichenbach's dried specimens." The species was described in 1886 (*Flora*, lxix., p. 558), without the slightest indication of the discoverer, who, Miss Woolward also says, is "unknown," but as Consul Lehmann remarks, "I first found it in 1883," it would appear that he is the unknown discoverer, and that it was before the specimens were sent to Reichenbach that he had the advantage of seeing them—for it is notorious that Reichenbach's Herbarium was as much a sealed book to his contemporaries during his lifetime as it is now after his death. If this supposition is correct the identification must be accepted, in spite of some serious discrepancies in the original description. For example, Reichenbach describes the leaves as cuneate-linear, and a foot long; the free parts of the sepals triangular, and extended into much longer tails; and the dimensions those of Masdevallia Gaskelliana: not one of which agrees with M. Lowii. My original remark respecting the latter (*Gard. Chron.*, 1890, i., p. 416) was, "Its nearest ally is M. trinema, Rchb. f., described from dried specimens, and which I am not aware has ever been in cultivation, but there are so many differences in the description that I think the present species must be quite distinct." And I may now add that in this species I have never seen the tails as long as the rest of the sepals, let alone "much longer," while the remark, "dimensions of M. Gaskelliana," is equally misleading, because in that the tails are invariably longer than the sepals. However, if the above identification is correct, the law of priority demands that my name shall be superseded, and, without contesting the point, one may venture to ask whether, in order to secure priority for a name, it is sufficient for an author to write a description which does not apply, refuse to let anyone see the specimen during his lifetime, and finally lock it up for a quarter of a century after his death? If so, the law of priority becomes an absolute farce. It is universally conceded that the mere publication of a name does not secure priority for it. It must be accompanied by a proper description, so that any competent person may recognise the thing to which it applies. The spirit of this rule has certainly not been carried out in the present instance, and it is a rather nice question how far the law of priority applies to it.

Catasetum Bungerothii furnishes a somewhat similar example. Reichenbach described a Catasetum pileatum from dried materials furnished by Messrs. Linden, and afterwards even gave a second description of it. Then Catasetum Bungerothii, N. E. Br., was described, and shortly afterwards Reichenbach declared that it was his C. pileatum. As soon, however, as an attempt was made to bring forward the original name Messrs. Linden

issued a protest, stating that the two were quite different. The result is that C. Bungerothii is again recognised. Messrs. Linden, however, are equally unable to say what C. pileatum really is, and it is my deliberate opinion that it is nothing but C. Bungerothii, yet even two Reichenbachian descriptions fail to establish the point. The fact is, some of Reichenbach's descriptions are almost worthless, as in one or two instances I have been able to compare them with the type plant and have found serious discrepancies. A certain amount of latitude must, of course, be allowed, especially when it is borne in mind that the original description of a species is often prepared from imperfect materials, and has to be subsequently amended, but when an author deliberately locks up his specimens from his contemporaries and successors, as Reichenbach has done, and they in consequence fail to identify his species and re-describe them under different names, I think no more consideration should be shown to him than to the one who publishes names without any description at all. This question will certainly arise when the Reichenbachian Herbarium is opened, unless it is previously settled, for the examples above-mentioned are not at all likely to be isolated cases.

To return, however, to Masdevallia trinema—at all events to the plant now figured as such, which is certainly M. Lowii—Consul Lehmann says that it occupies a very small range on the western mountains in the north of the Cauca, and of Western Antioquia, in Columbia, growing on trees in thick damp woods, at an elevation of about 4,800 to 6,000 feet. It is rare, and generally selects those trees which border the banks of mountain streams and rivulets. At Frontino it always grows mixed with plants of M. Peristeria, M. nidifica, and M. Carderi, and the climate of its habitat is similar to that of M. Chimæra, but a degree or two higher. It varies somewhat in the colour of the flowers.

R. A. ROLFE.

CATASETUM × SPLENDENS WORTHINGTONIANUM.

Another striking form of this polymorphic natural hybrid has appeared, of which a flower and photograph have been received from H. Worthington, Esq., Whalley Range, Manchester. It was obtained from Messrs. Linden's importations. It has the structure of the typical form, but the basal half of the petals is strongly suffused with lurid purple, and the sepals less strongly so, while the basal part and sides of the lip are also strongly suffused with a similar colour, the front being white, and the spur yellow inside. The lip is less open than in C. Bungerothii. A form has also flowered with Messrs. Hugh Low & Co., which is exactly identical with C. × s. flavescens in shape, but the flowers are light green in colour.

VANDA CŒRULEA.

THE annexed illustration is reproduced from a photograph sent by E. H. Woodall, Esq., of Scarborough, one of our most successful cultivators of this beautiful species. It represents the remarkably fine form to which a First-class Certificate was awarded on August 13th last, as recorded at page

Fig. 13.—VANDA CŒRULEA.

287. Mr. Woodall's method of treatment is briefly outlined in the accompanying note which he has kindly sent us, and we would earnestly recommend all those who have not succeeded in growing the plant as they could wish to adopt the same, and we are convinced that they will not regret it. Further notes appear at Vol. I., p. 306, and Vol. II., p. 362,

where the conditions under which the plant grows in a wild state are pointed out, and these afford one of the safest guides for the cultivator to follow. Vandas, like many other genera, do not all grow under identical conditions; some affect a cooler climate than others, and these peculiarities cannot be neglected by the cultivator with impunity. It is evident that Vanda cœrulea grows where the extremes of temperature between summer and winter are much greater than those to which the Malayan species are subjected, and where also the winter temperature descends much lower. Mr. Woodall's treatment is more in accord with the natural conditions under which the plant grows than that adopted in some collections, and the success attained is seen in the illustration, and in another photograph sent, showing one of his magnificent baskets with several spikes of flower. The following is Mr. Woodall's note:—

"The plant of Vanda cœrulea shown in the plate is interesting as well as beautiful, because the plant from which it was cut endured for nearly three years the most varying treatment while trying to find out what suited it best. It speaks volumes for the hardiness and vigour of this species to be able to say that after enduring the heat and moisture of a warm stove for a year-and-a-half, it has now recovered so thoroughly as to be able to produce a spike of bloom, to which a First-class Certificate was granted last August. The secret—if there be one—of success with this lovely flower is *air*; abundance of it whenever possible, with sufficient moisture in the atmosphere to counteract the excessive drying caused by ventilation. Warm vinery treatment from Mid-March to Mid-October, a winter near the glass in the Cattleya house, and in the end of January or in early February a dry cold rest in a house where Primulas and such like plants are happy, will ensure success in any pure air. I much suspect this is an Orchid that especially dislikes the smallest taint of smoke in the air."—E. H. WOODALL.

We have also received from J. Gurney Fowler, Esq., South Woodford, a beautiful photograph of the plant with four spikes, for which he received a First-class Certificate on the same date as Mr. Woodall's plant. Mr. Fowler states that his plants are grown in the East Indian house, over a large water tank, with plenty of ventilation.

CATTLEYA ELATIOR.

This is a very rare little Cattleya, of which a few plants are scattered about in various collections, though not under its correct name—indeed, its history has never yet been properly written. It was described in 1831 by Dr. Lindley (*Gen. and Sp. Orch.*, p. 117), who briefly mentioned it as a Brazilian plant which he had met with in cultivation, after which it appears to have been completely lost sight of, for in 1844 Lindley enumerated it as a

synonym of C. guttata, without further remark (*Bot. Reg.*, xxx., sub. t. 5). In 1892 it re-appeared among the Brazilian importations of Messrs. F. Sander & Co., flowering in July of that year, when it was again described by Dr. Kränzlin under the name of Cattleya Batalini, Sander & Kränzl. (*Gard. Chron.*, 1892, ii., p. 332.) Another plant appeared in the collection of M. A. Van Imschoot, of Mont-St.-Amand, Gand. It is very closely allied to C. guttata, Lindl., but has even smaller flowers, with proportionately broader petals, which only measure 1¼ inches long, while the front lobe of the lip is rather more narrowly stalked. The sepals and petals are yellowish-rose or purplish, and quite without spots, and the lip has the side lobes whitish and the front lobe purple. It has been compared with C. Schilleriana, C. Aclandiæ, and C. bicolor, but is very different from the two latter in the ample side lobes, and from the former in the flat petals, the stalked front lobe of the lip, and the far smaller size. In fact, it is the smallest flowered species in the group. Its precise habitat has not been recorded, and it would be interesting to know more about this curious little plant.

INSECT PESTS.

I have been greatly troubled by insects eating germinating Orchid seeds, and some pests, such as small roaches and woodlice, are troublesome to every Orchid grower. After consulting all the available authorities on insecticides—the U.S. Government Experiment Stations have issued numerous bulletins on the subject—I constructed an airtight chamber of wood and glass, like an aquarium, closed by a moveable pane on top, resting on strips of a very soft thick cotton material, and tried fumigating the plants, both old and young, with carbon bisulphide. My chamber is 14 by 14 by 24 inches, and hence contains $2\frac{1}{6}$ cubic feet of space For this one fluid dram of the carbon bisulphide, introduced in a saucer, suffices, and the chamber is tightly closed for three or four hours. I cannot see the slightest injury, either at the time or afterwards, to germinating seeds, small plants or full grown ones, while the vapour, penetrating everywhere, destroys every trace of animal life, whether woodlouse, slug, worm, or insect. The only objection I have found to it so far is that it discolors and perhaps corrodes copper wire, and thus might introduce salts of copper, where they possibly might do damage to roots. It does not affect galvanised wire. If all newly-imported plants were thus fumigated it would dispose of many a destructive insect that otherwise might be set loose to prey on other plants in the collection. This is a practical matter, which ought to be known and more widely experimented on.

THEODORE L. MEAD.

Oviedo, Flo., U.S.A.

ORCHIDS IN THE JUNGLE.

By Major-Gen. E. S. BERKELEY.

PROBABLY the best known of the Saccolabiums is S. Blumei, which is no doubt identical with Rhynchostylis retusa, Blume, found originally in Java. It is identified under the latter name in Veitch's *Manual*, and other publications, but it will probably be many years before it loses its popular name.

The special home of this plant, in its finest variety, is Toungho, Central Burmah, in the neighbournood of which it occurs in enormous quantities. It is, however, found under similar conditions in many other parts of Burmah, but in no part of the country is it seen in such grand form, and growing in such huge masses. It is specially found on the detached trees scattered along the banks which surround the rice fields. These banks are made to retain the water in which the rice grows, so that the whole country, with the exception of these banks, is at certain seasons under water. The trees are far apart, so that the plants growing on them get the maximum of light and air, and this will account for the abundance of plants found growing on these trees, as compared wiih the scanty number found in the neighbouring forest. During the rains these plants grow under an exceptionally moist condition of the atmosphere, as not only is the country covered with water, but it rains for several hours daily.

The branches of the trees are often completely covered with this plant exclusively, from the tiny seedling to the full-grown mass, the latter almost as old as the tree itself. The seeds, blown by the wind from the jungle, naturally attach themselves to such trees, and, finding the situation suitable, grow with great rapidity.

During the heavy rains the tips of the long roots (spongioles) are very sticky and gelatinous, quickly sucking up the moisture received, and adapting the same to the wants of the plant. It would be a very interesting scientific investigation to find out the chemical changes which take place during this period of active root-growth, as it might then be possible to ascertain in what proportion the elements of the plant are built up by the action of the rain alone. It is a far-fetched idea, in my opinion, that birds provide Orchids with nourishment by their droppings. It is in the laboratory of nature that the chemical process takes place, and the plant food is provided.

After the rains cease, the water remains in the fields until the time comes for the rice to ripen, it is then run off. The whole country then becomes exceedingly dry, growth ceases, the plants lose their sappy condition, and the leaves become firm and leathery. This condition enables the plants to withstand the severe changes of temperature which follow during the dry season, the days being very hot and the nights cold.

Spot, which affects plants of this class so often in our hot-houses, is entirely absent in the jungle. This is explained by the rapid root action during the heavy rains, which enables the plant to absorb the moisture, and by the absence of any softness in the leaves during the dry season, when the cold at night might affect them. The only moisture the plant receives during the dry season is from the night dews. The roots being free and unconfined to pots is an advantage, our plants under cultivation frequently getting a chill at the roots through the cold damp material surrounding them. These may seem to be small details to record, but to a certain extent the conditions under which a plant grows best in its native habitat is a help towards its proper management in our houses in England. I think this plant would even be more popular than it is if it could always be kept in good condition. The thing to look to is the root, as when root growth is active no amount of moisture is too great. When the cold weather comes root action ceases, it is then necessary to ripen the leaves, to get them into that leathery condition which will enable them to resist all sudden changes of temperature.

The variety Blumei is easily distinguished from its allied forms by its flowers being spotted more or less with patches of amethyst-purple. It is frequently supposed that Blumei is the only variety of Rhynchostylis retusa found in Burmah, but this is not the case. If you travel across the country about 80 miles from Tounghoo in an eastward direction to the north bank of the river Irrawaddy you find yourself in a district with entirely different surroundings and distinct vegetation. The rice fields have disappeared, you travel through a country of undulating hills covered with deciduous forest. The undergrowth of these forests consists principally of lovely varieties of flowering Hibiscus, which I have never come across in any other part of Burmah. The heat is intense during the day, but the nights are very cold, hence, no doubt, the fall of the leaves. Here the variety Blumei is replaced by guttata, the Indian form, in which the markings on the sepals and petals do not run into round spots, but more or less form lines running crossways, with sometimes some tiny specks of colour at the base.

The variety Blumei would therefore appear to extend from Java up the Peninsula to the Irrawaddy, and cease when you get to the north-east of the river about the Thayetungo district. The variety guttata then appears to take the place of Blumei from this point to the extreme west point of India and Ceylon.

At the foot of the Materan Hills, near Bombay, I found the short-leaved form præmorsa growing on the mango trees: a nice thing, but I cannot say that there is much difference between the flower of this and that of guttata. The difference is in the foliage, which is very short and abrupt.

The most distinct form that I came across was the variety Berkeleyi,

which I gave particulars of in my previous articles (vol. I., page 336). Here also I noted the lovely early-flowering form of Blumei found in the Andamans, which I have seen in flower as early as April, on which account it is a very valuable variety. With the exception of the Andaman plant all the varieties flower in September and October.

The country above mentioned, as situated North East of the river Irrawaddy, extending to the Arracan Hills on the east and Munipur on the north, contains several other good things, which even the intense heat during the hot weather does not kill. The cool nights and the dry state of the plants at this season may account for this, but when it is considered that in nearly all this region the trees are deciduous and are bare of leaves for three months, it is wonderful that the Orchids are able to survive the effects of the fierce rays of the sun. Some of the leaves do get scorched up, but many do not. It is true that directly the cold nights cease, the trees at once put forth their leaves, so that at the very hottest time of the year, before the rains set in, the plants get some protection, but it must be a trying ordeal, and shows the severity of climate these plants are capable of enduring. I think I may say that it is no uncommon thing during the winter months for the thermometer in the neighbourhood of Thayetungo to go down to 45° at night, rising during the day to from 100° to 110° F. (shade temperature).

Saccolabium giganteum, which is very abundant in this district, appears neither to feel the cold at nights nor the heat in the day-time, as it flourishes in the driest season. This plant is known in Thayetungo as the Christmas Orchid, and it is always brought in in quantity in flower for Christmas decoration. Of all the Saccolabium family the fragrance of the flowers of this variety is the most agreeable.

With it are found in abundance, and growing under the same conditions, Vanda Bensonæ, and V. Denisoniana. Here also I found in quantity V. parviflora. How did this plant get there? What an adaptability to various conditions it must have! I found the same plant growing with V. Roxburghii in Southern India: I gathered it in the steamey valleys at the bottom of the Materan Hills, Bombay; again down the western coast, and in Ceylon, and also in the extra-tropical regions of the Himalayas, in the valleys below Chuckrata, where snow often falls in the winter.

I think one thing is tolerably clear from the above remarks, made on the plants growing in the districts described, that given an airy and dry situation, any of them will do well and pass through the winter without injury. As the rains fall early in the districts mentioned, the first shower occuring in March and April, it may be advisable when the weather is favourable in the spring to give a little moisture to encourage growth, but wet material, liable to chill the roots, should not surround the same during the winter, at a time when cold draughts may prevail in the houses.

CATTLEYA GUTTATA.

Flowers of a small green Cattleya with purple-brown spots have been received from three different sources, with request for name. They belong to the old Cattleya guttata, Lindl., and it is curious to note how its identity has been lost sight of, through the name having been transferred to other species. It was originally figured and described in 1831 (*Bot. Reg.*, xvii., t. 1406), from a plant which flowered in the garden of the Horticultural Society, and which had been sent from Brazil about four years previously, by the Right Hon. Robert Gordon. Lindley remarked that the spotting of the flower was remarkably different from anything previously seen in the genus. On December 6th, 1836, a fine specimen bearing a raceme of twenty-four flowers was exhibited at a meeting of the Horticultural Society, by Richard Harrison, Esq., of Aigburth, near Liverpool, to which a Silver Knightian Medal was awarded. It was figured in the Society's *Transactions* (ser. 2, ii. p. 177, t. 8), and Lindley described it as with one exception the most noble specimen of this natural order which he had had the good fortune to observe. In 1848 it was again figured and described, under the name of C. sphenophora, by C. Morren (*Ann. de Gand*, iv., p. 17, t. 175), from plants in the establishment of M. Ambrose Verschaffelt, which had been sent from Santa Catherina by Devos. It appears to be rather widely diffused in the coast region of S. E. Brazil, having been met with in the provinces of Rio de Janeiro, Minas Geraes, Sao Paulo, and Santa Catherina, besides which it is reported to have been received among importations of C. amethystoglossa from Bahia, which we should like to see confirmed. It is a small-flowered species, the sepals and petals being $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long. and the colour green spotted with purple-brown. The lip is very deeply three-lobed, the front lobe being rose-purple and narrowly stalked, and the large subacute side lobes white. It has been much confused with C. Leopoldi and C. amethystoglossa, to which most of the described varieties (so-called) belong, but is easily distinguished by its much smaller size, the stalked front lobe of the lip, and from the last-named also in its very different colour. The plant figured in *Lindenia* as C. guttata, Lindl. (x., p. 21, t. 441), is also incorrect, and belongs to C. Leopoldi. There are two varieties which, judging by the descriptions, belong to C. guttata, Lindl., namely:—

VAR. PUNCTULATA, Rchb. in *Gard. Chron.*, 1880, ii., p. 358.—Sepals and petals light sulphur, with only very few small purple spots. It flowered in the collection of J. Day, Esq., at Tottenham.

VAR. MUNDA, Rchb. f., in *Gard. Chron.*, 1888, ii., p. 378.—Sepals and petals green without any spots, ultimately becoming light yellow. It flowered with Messrs. Seeger & Tropp, of East Dulwich.

CALENDAR OF OPERATIONS FOR NOVEMBER.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

THE temperatures for this month should be allowed a fall of a few degrees, not exceeding five, below those given for last month, due regard being had to the outside conditions.

A good deal of attention should now be given to the atmosphere of the houses. By all means avoid a fiery dry air when strong heat from the pipes is necessary, judiciously damping down once or twice a day as may seem necessary. On the other hand avoid an atmosphere overladen with moisture during damp mild weather, when but little fire heat is needed, for at such times very little damping down should be done. Whole days may probably pass by when it may be inadvisable to use a drop of water for such a purpose. It is impossible to write down instructions which are applicable to all cases, and the cultivator must use his discretion to some extent as to when damping down is necessary. Excessive drought causes the plants to lose vitality, whilst excessive moisture is a prolific source of spot, and other diseases. The coolest houses, where less artificial warmth is necessary, are those demanding the least amount of moisture.

Watering is another matter which must be done very carefully at this season. Even those plants which are in growth during the winter, such as Odontoglossum crispum, will require comparatively little, while all those species having a decided season of rest will require much less. Enough, however, must be supplied to keep the pseudobulbs quite plump. Once a week, or once in two or three weeks, may suffice, according to the weather and the strength of the plants. I recommend generally when giving a plant water to do it thoroughly, but there are exceptions to this rule also. For instance, when a plant is in a large receptacle, which necessitates a large mass of compost, it often becomes advisable, especially at this dull time of year, to moisten the surface of the compost only, for if the whole body is saturated a long period must elapse before it again evaporates. If there should be a doubt as to a plant being sufficiently dry to require watering let it remain until the following day. Always bear in mind that plants in small baskets or pots require more frequent watering than those in large ones. Should the water by any means lodge in the young growths at this season, make it a practice to get it out at once.

It is better to suspend all repotting operations for the winter, for great risks are run if the roots are then disturbed. It may be done with greater impunity and less risk in localities where the maximum amount of light is to be had than in large commercial centres, where the atmosphere is necessarily much heavier. On the whole it is exceedingly bad practice to repot in winter. Newly-imported plants must, however, be attended to without delay. Clean them and pot them up, if only temporarily, and place them at once in their respective houses. Keep the surrounding

conditions as evenly balanced as possible, for extremes in wet or drought would be very injurious to them at this stage. As soon as there are signs of such plants starting to grow see that they are encouraged to do so, even though the time may be mid-winter. Under these conditions newly-imported plants arriving in the autumn or early winter may probably pull through successfully.

The several departments, if not already done, should be gone through and well washed and cleaned, the glass and woodwork, both inside and out, being attended to, and the walls lime-washed, while the plants themselves should not escape a searching examination for scale, thrip, and other insect pests. A thorough good cleaning periodically not only increases the light, which is so much needed in winter, but is invaluable as a means of keeping that troublesome army of ants, cockroaches, wood-lice, slugs, &c., effectually in check.

The inmates of the Cool house were troubled somewhat during the very hot weather in September, resulting in the loss of a few leaves, though, with this exception, no serious injury was noticed. But the cooler weather which came with the month of October was decidedly welcomed for this particular class of plants, and they are now looking none the worse. Avoid much damping down in this department. It must not be thought that because a good deal of moisture is beneficial in summer that it is likewise needed in winter. The air in this country is generally as fully charged with moisture in the winter as it is on the mountains in South America, from whence these cool Orchids come, so that, while this moist air can be admitted freely through the ventilators, and very little fire heat is needed, scarcely any damping down is required. When the external temperature is above 45°, air may be admitted freely, but when it is below this, more care is necessary to prevent the fresh air entering directly upon the plants. During very cold weather, when little or no air can be admitted, then is the time for damping down, so that the atmosphere shall register only 1° to 2° of evaporation; or, in other words, the dry bulb of the hygrometer shall show 1° or 2° warmer than the wet bulb. In order to bring about these figures, damping once or twice a day in hard weather is generally desirable.

A good many flower-spikes are now making their appearance in this department, and among them are Oncidium varicosum and O. Forbesii. These two species, I find, expand their flowers much better if given a temperature a trifle warmer, otherwise the flower buds are apt to turn yellow and drop. They are best to remain there throughout the winter; but if space does not permit, they may be returned to the coolest house with perfect safety if kept on the dry side. Oncidium ornithorhynchum is also now making a good show, and is best under the above warmer winter treatment. O. tigrinum, O. crispum, O. Gravesianum, and O. macranthum are others about to open their lovely flowers; also those three pretty little Cool

house, pan or basket Orchids—Odontoglossum Cervantesii, O. Rossii, and Sophronitis grandiflora. Odontoglossum Edwardi, O. Uroskinneri, and O. ramosissimum are also about to flower.

Odontoglossum coronarium has now just passed out of bloom, and I have never seen one flower so well before. In the Calendar for April last I mentioned this Orchid, and gave a detailed account of what we surmised to be the reason of our flowering this species, which had hitherto proved so shy. This plant had grown vigorously, and to my knowledge had not bloomed for five years. But since flowering in April, when it produced one solitary spike out of what we then thought to be a possible four, it has surprised us, for not only have the remaining three leading pseudobulbs produced their spikes of nearly thirty flowers each, but four other spikes have also made their appearance from old back pseudobulbs, one of which is four years old. The plant during the whole time has been making vigorous new growth. Such are the peculiarities of Orchids. The freaks that they sometimes indulge in are often very amusing, though perhaps I may be wrong by alluding to this case as a freak. Indeed, on reflection, it seems perfectly rational that this Orchid, like some few others, when it has attained the desired age and strength should flower freely enough. Still, we may perhaps be excused for getting a little impatient sometimes, especially when a plant seems to all appearances sufficiently strong, the new pseudobulbs being equal, or even larger than the old imported ones.

There will be a good display of bloom this month, for where is the Orchidist who, having the space at his disposal, would not grow a good batch of that beautiful Orchid, Dendrobium Phalænopsis? And who could not admire the lovely show that their charming flowers produce? Although the show of bloom may not be quite so imposing this year as we have previously seen it—certain it is that Dendrobiums, on the whole (speaking from the collections that I have had the pleasure of seeing), are a little below the average standard this year, though the cause is difficult to explain—yet the show is a good and most useful one. It is a warm house Dendrobium, and should always remain there. It requires a rest after blooming, but do not dry them off too much. These evergreen species will not withstand so much drought as the deciduous ones. D. formosum giganteum is likewise a useful and beautiful species for this season, and should have similar treatment. In previous Calendars I have entered more fully into the culture of Dendrobiums, mentioning the names of many as warm-resting sorts, and others that will do better in cooler houses. I may again remark that it is a most important factor in the successful culture of this genus that the various kinds should winter or rest in the temperatures as near as it is possible to get to their liking.

The Cattleya House, too, in this dull month of November will stand second to none in splendour. I think every Orchid grower finds room for

such a lovely Cattleya as labiata, and grows a large quantity of it. One is sometimes asked the question, "Which do you think is the prettiest Cattleya of the labiata section?" Well, I believe Cattleya Mossiæ has held its own against all comers pretty successfully, but if it could be staged in flower side by side with C. labiata, I fancy the former would have a hard task to retain its premier position. The brilliancy of colour of C. labiata is truly beautiful, and as the light of the day varies so does it seem to change the various shades of colour of the flowers. It is an Orchid that grows most vigorously when newly imported, but it is advisable to be watchful, for it has not such a strong constitution as it would lead one to think. See that the roots are always kept in good condition by repotting when required. Once in about two years it should be completely taken out of the old compost and repotted in fresh, clean materials. Three years should certainly be the outside limit. I may again remind growers that C. labiata, like C. Dowiana, has a rather unpleasant habit of losing its new pseudobulb directly after flowering by damping and rotting. This decay, which is greatly accelerated by damp, dull weather, sets in from where the flowers are cut, and if not stopped rapidly it descends, and the results may be fully imagined. In order to avoid this remove the old flower spike and sheath entirely, after which the wound soon heals, and damping then rarely occurs.

Pleione lagenaria and P. maculata are again very pretty while they last. These little Orchids are of easy culture, though sometimes they may be seen in very indifferent health. As deciduous Orchids they are often thought to require a rest after flowering, but this is a mistake. Pleiones are never really inactive. Directly the flowers have faded they commence to grow and emit new roots, and this is the time to repot them. I find that it is not necessary to do this every year. Once in two years will suffice. Sphagnum moss and peat broken up finely, and mixed together, is a most suitable compost for them. A little fibrous loam may also be added with no ill effect. After repotting keep the compost just moist, and suspend them in an intermediate temperature. Pleiones delight in an abundance of light.

Odontoglossum grande is now just passing its best period. Such a good old species is really worth growing well, and is hard to beat as an autumn bloomer. To accomplish excellent culture my experience is that it should be treated simply as an Intermediate house Orchid, though I would not advise its removal from a Cool house if doing well, prefering—as in the case of other Orchids which grow well in what is commonly considered the wrong house—to leave well alone. It should be kept on the dry side during the winter.

Phalænopses will now be showing their flower-spikes. This genus gives very little trouble when the structure is a suitable one. They should

always occupy the warmest part of the house, and be suspended just so far from the glass that the cold from the same does not strike down upon them. Avoid, also, cold draughts, and water during winter very carefully. Under such treatment they should grow well, and keep free from that tiresome spot. They are soon laid low when attacked by spot, which I think is generally caused by a check brought about by too low a temperature, especially if they are at the same time wet.

Schomburgkias grow very successfully with Mexican Orchids during summer, but will not withstand so much cold during winter as many of that order. I have known the Mexican short-bulbed Lælias take no harm when the thermometer has fallen almost to freezing point for a short time when the atmosphere has been very dry. But I am far from advocating such a low temperature, for I have never seen their coudition improved thereby. A well balanced intermediate temperature should be the aim, but if this cannot be relied upon Schomburgkias should certainly be removed to a warmer house. Lælia superbiens produces its spike in summer, but does not flower until the following early spring, when the spike will have reached six or seven feet in length. Calanthes should now have much less water, enough only to support the flower spikes, which are now getting well advanced. The intermediate Aërides crispum and its varieties, also A. Fieldingii, require but little water during winter, and delight in the same house as the Cattleyas.

CYPRIPEDIUM KIMBALLIANUM.

The facts relating to this plant and the other species of its section having been fully stated, it will be neither profitable nor edifying to the readers of the *Orchid Review* to traverse the remarks on the subject in the issue for October last. The chief question affects the first Cypripedium Kimballianum, respecting which I asked for reference to its publication as a species. By this I meant a description entitling it to the consideration of the botanist. The fact that the writer refers to the enumeration of the name only in catalogues and lists of garden plants, explains his treatment of the subject, namely, to embody in his note all the material necessary to make it complete for the Orchid growers and amateurs who so largely patronise the *Orchid Review*. In this he was doubtless right, and I readily withdraw any remarks, which he may consider unpleasant, although nothing was further from my mind than to give offence.

JAMES O'BRIEN.

[We are much obliged for Mr. O'Brien's note. Our object in calling attention to the matter was to rectify a series of perfectly unnecessary blunders, and we certainly thought that the remarks now happily withdrawn were unmerited. When an Orchid has been mentioned in five

different lists, and one comes across the name again, it is only natural to suppose that the same thing is intended, and not something different, as in the present instance. Mr. O'Brien appears to think that the first C. Kimballianum must be ignored because none of the five lists contain a description, but this rule does not apply when any previously published description can be cited, and in the present case there is such a description, for the plant was first described and figured as C. præstans var. Kimballianum. The only question is whether C. Kimballianum, Ballif, is identical with this plant, and of this no doubt can exist, for the author himself first enumerated it as C. præstans var. Kimballianum, but afterwards very erroneously made a species of it. We cannot find any character to separate it even as a variety. Part of the confusion arose through the erroneous locality ascribed to C. Rothschildianum, and the attempt made to represent C. novoguineense as synonymous with C. Rothschildianum, instead of with C. præstans, was probably due to the same cause. No one is bound to divulge the locality of a meritorious new garden plant, but we certainly have a right to expect that whatever is published shall not be deliberately erroneous. This incident about Cypripedium Kimballianum is instructive in more ways than one. ED.]

ORCHID PORTRAITS.

CATASETUM STUPENDUM, Cogn.—*Lindenia*, t. 587. This is Catasetum incurvum, Klotzsch.

CATTLEYA AUREA MRS. F. HARDY.—*Gard. Mag.*, Oct. 19, p. 664, with fig.

CATTLEYA SUPERBA ALBA.—*Journ. of Hort.*, Oct 3, p. 321, fig. 52.

CŒLOGYNE CRISTATA.—*Journ. of Hort.*, Oct. 10, p. 349, fig. 56.

CYMBIDIUM × EBURNEO-LOWIANUM.—*The Garden*, Oct. 5, p. 262, t. 1034.

CYMBIDIUM EBURNEUM, Lindl.—*Journ. des Orch.*, Oct. 1, pp. 219, 220, with fig.

CYPRIPEDIUM × CYRIS.—*Journ. of Hort.*, Oct. 17, p. 363, fig. 58.

CYPRIPEDIUM × LORD DERBY.—*Gard. Chron.*, Sept. 28, pp. 357, 358, fig. 66.

DENDROBIUM PHALÆNOPSIS VAR. HOLOLEUCA.—*Gard. Chron.* Oct. 5, pp. 396, 397, fig. 72.

EULOPHIA CONGOENSIS, Cogn.—*Lindenia*, t. 586. A form of E. guineensis, Lindl.

LÆLIO-CATTLEYA × CLONIA SUPERBA.—*Gard. Chron.*, Oct. 12, pp. 420, 421, fig. 74.

MILTONIA SPECTABILIS.—*Gard. Mag.*, Oct. 12, p. 642, with fig.

MORMODES ROLFEANUM, L. Lind.—*Bot. Mag.*, t. 7438.

SACCOLABIUM AMPULLACEUM, Lindl.—*Lindenia*, t. 485.

THUNIA MARSHALLIANA, Rchb. f.—*Rev. Hort. Belge*, Oct., p. 229, with plate.

VANDA PARISHII, Rchb. f. VAR. MARRIOTTIANA, Rchb. f.—*Lindenia*, t. 588.

CATTLEYA × FOWLERI.—*Gard. Mag.*, Aug. 25, p. 526, with fig.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

AT the Royal Horticultural Society's meeting held at the Drill Hall, James Street, Westminster, on October 15th, there was a very brilliant display of Orchids, the fine old Cattleya labiata, especially, being present in great force, and including several fine varieties, to three of which special awards were given.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis), staged a very fine group, to which a Silver Flora Medal was awarded. It contained a number of Cattleya labiata, a fine Vanda Sanderiana, V. cœrulea, a noble specimen of Epidendrum Godseffianum, Miltonia spectabilis Moreliana, Cypripedium Charlesworthii, and C. Spicerianum, and some good Dendrobium Phalænopsis.

Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne (gr. Mr. Murray), received a First-class Certificate for a very fine form of Cattleya labiata called C. l. Cooksoniæ, very similar to C. l. elegans, the lip having a rich crimson-purple front lobe with narrow white margin, and the rest of the flower white.

The Right Hon. Lord Rothschild, Tring Park (gr. Mr. Hill), exhibited a very remarkable Cirrhopetalum called C. Rothschildianum, allied to C. ornatissimum, but larger and with more purple in the flowers. It received a First-class Certificate.

W. J. Thompson, Esq., Walton Grange, Stone (gr. Mr. Stevens), sent several handsome things, three of which each received an Award of Merit. These were Cattleya labiata cœrulea, with a four-flowered spike, the segments being very pale lilac, and the front lobe of the lip of a peculiar dull violet-purple, almost approaching slaty-blue; another called Thompson's variety, with very large and richly-coloured flowers; and Cypripedium Charlesworthii marginatum, a very distinct form, with a nearly white upper sepal, suffused with light rose at the base and round the margin. A fine Vanda Kimballiana with seven racemes received a Cultural Commendation. Cut spikes of Odontoglossum crispum, Pescatorei, and Harryanum, also Miltonia Schrœderiana and the rare Oncidium onustum, were also shown.

Walter Cobb, Esq., Dulcote, Tunbridge Wells (gr. Mr. Howes), showed a good plant of the rare and handsome natural hybrid, Miltonia × Lamarcheana, which received an Award of Merit.

C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Duncan), received an Award of Merit for the pretty Sobralia Lindeni.

A. J. Hollington, Esq., Forty Hill, Enfield (gr. Mr. Ayling), sent the charming little Cypripedium × Evenor, and C. × Alfred Hollington (C. ciliolare ♀ × C. philippinense ♂), the reverse cross of C. × Finetianum, and practically a fine variety of the same. The latter received an Award of Merit.

E. Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook), sent a flower of Cypripedium × Lawrenceano-Curtisii to show its long-lasting qualities. It was from the plant which took the Second Prize at Manchester last Whitsuntide (see page 219), and thus had remained fresh for a period of nineteen weeks.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Cooke), showed a very good form of Vanda Kimballiana.

J. F. Ebner, Esq., Beckenham (gr. Mr. Waite) sent two hybrid Cypripediums without any indication of their parentage.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), sent a good form of Cattleya Bowringiana.

S. G. Lutwyche, Esq., Eden Park, Beckenham (gr. Mr. Patterson), sent a fine plant of Oncidium tigrinum, Selenipedium × Ainsworthii, and a small plant of Miltonia × Lamarcheana.

Sir W. Marriott, Down House, Blandford, sent Cypripedium × Marriottianum, a very pretty little hybrid of doubtful parentage, but possibly derived from C. niveum and C. Spicerianum.

G. Marshall, Esq., Claremont House, Grimsby (gr. Mr. Johnson), sent cut spikes of Vanda Kimballiana.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, sent Bulbophyllum disciflorum and a small Restrepia.

A. Shipley, Esq., Elmfield, Westbury-on-Trym, Bristol, sent Cattleya elongata.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson) sent cut blooms of the splendid Lælio-cattleya × Lord Rothschild, the singular Cattleya bicolor cœrulea, and two good forms of Cattleya Dowiana, one of which had the upper half of each petal much marbled with rose.

Sir F. Wigan, Clare Lawn, East Sheen (gr. Mr. Young), sent a fine raceme of Cœlogyne pandurata with nine flowers.

Messrs. James Veitch & Sons, Chelsea, exhibited several fine hybrids, including Cattleya × Mantini (C. Bowringiana ♀ × C. Dowiana ♂), a charming little hybrid described at page 365 of our last volume, which received an Award of Merit; Lælio-cattleya × Eunomia superba; L.-c. × Fortuna (C. Mossiæ ♀ × L.-c. × Schilleriana ♂); and L.-c. × Isis (L. pumila ♀ × C. × Marstersoniæ ♂).

Messrs. Charlesworth & Co., Heaton, Bradford, staged an effective

group, to which a Silver Banksian Medal was awarded. It contained a large and well-flowered clump of Vanda cœrulea with eight spikes, some good plants of Cattleya labiata, Odontoglossum crispum, Catasetum Bungerothii, and some good forms of Cypripedium Charlesworthii.

Messrs. Hugh Low & Co., Upper Clapton, also received a Silver Banksian Medal for a showy group, containing numerous plants of Cattleya labiata, one beautiful form called C. l. Lowiæ receiving an Award of Merit. The flowers were white, and the front lobe of the lip purple-crimson with a very broad white margin. The group also contained a number of Cypripedium Charlesworthii, C. × Arthurianum, C. × œnanthum superbum, Phalænopsis × intermedia, the curious Bulbophyllum mandibulare, Cycnoches chlorochilon, &c.

Messrs. F. Sander & Co., St. Albans, staged a very fine group, to which a Silver Banksian Medal was given. It contained the remarkable Epilælia × Hardyana, described at page 364 of our last volume, a fine pan of Habenaria Susannæ, Miltonia spectabilis Moreliana, Zygopetalum maxillare, Mormodes Rolfeanum and M. tigrinum, Catasetum Darwinianum, some good forms of Dendrobium Phalænopsis, Oncidium varicosum Rogersii, O. Marshallianum, and O. ornithorhynchum, Cypripedium × Niobe, and others, some good plants of Sophronitis grandiflora, Lælia Perrinii nivea, L. præstans, and Lælio-cattleya × Gottoiana rosea, rather lighter in colour than the original form described at page 338 of our first volume.

Messrs. B. S. Williams & Son, Upper Holloway, sent a very interesting group, in which three fine Pescatoreas were conspicuous, namely, P. Lehmanni, P. Klabochorum, and P. Roezlii alba. It also contained Pleione maculata, Odontoglossum grande, some good Cattleya labiata, and some fine Cypripediums, including C. × Arthurianum, C. insigne Wallacei, C. × enfieldense, C. × vexillarium, C. × œnanthum superbum, and others. A Vote of Thanks was accorded.

Mr. P. McArthur, Maida Vale, also staged a good group, and received a Vote of Thanks. It included Dendrobium Phalænopsis, D. formosum, Maxillaria grandiflora, Cattleya labiata, Cypripediums, &c.

M. A. A. Peeters, Saint Gilles, Brussels, sent a very handsome hybrid Cypripedium of unrecorded parentage, but evidently allied to C. × Charles Richman; and the handsome Cattleya labiata Petersii, with very dark, flaked flowers.

CORRESPONDENCE, &c.

A. A. P., Brussels. Odontoglossum cariniferum.

H. J. R., Florence. Bollea hemixantha, Rchb. f.

T. I. P., Trinidad. Trichopilia Wageneri, Oncidium iridifolium, O. sp. uncertain, but near flexuosum.

H. G., Haslingden. Lycaste mesochlæna.

G. B., Hamburg. Aërides suavissimum.

Subscriptions for 1895 have expired.

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THE ORCHID REVIEW:

An Illustrated Monthly Journal,

DEVOTED TO ORCHIDOLOGY.

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THE ORCHID REVIEW.

VOL. III.] *DECEMBER*, 1895. [No. 36.

NOTES.

THE last meeting of the year of the Royal Horticultural Society will be held at the Drill Hall, James Street, Westminster, on December 10th, when the Orchid Committee will meet at the usual hour of 12 o'clock, noon.

Messrs. James Veitch & Sons, Chelsea, send three beautiful hybrids, all seedlings from Lælia Perrinii. They are Lælio-cattleya × Statteriana, L.-c. × Decia, and L.-c. × Lady Rothschild, the pollen parents being respectively Cattleya labiata, C. Dowiana, and C. Warscewiczii. The two former are pretty well known, and the latter, which is equally beautiful, bears a general resemblance to them. The sepals and petals are light mauve-purple, $3\frac{1}{4}$ inches long, and the front of the lip deep purple with a white throat.

E. Ashworth, Esq., Harefield Hall, Wilmslow, sends a series of flowers of Oncidium varicosum and its splendid variety Rogersii, the lips of the latter measuring slightly under $2\frac{1}{4}$ inches across. Different individuals vary somewhat, as will be seen from the note at page 103.

A malformed flower of Cypripedium insigne sent by Mrs. Barton, Bow, N. Devon, has only the two sepals and the column. Curiously enough it flowered four weeks before the normal flowers on the same plant expanded.

A flower of the beautiful Cypripedium insigne Sanderæ has been sent by O. O. Wrigley, Esq., Bridge Hall, Bury. It is from a small plant purchased about a year ago, and is part of the original piece.

Another beautiful yellow variety of C. insigne, called Laura Kimball, comes from Messrs. Hugh Low & Co., Clapton Nursery, and though pretty similar in shape is remarkably different in colour. It is part of the plant in Mr. Kimball's collection, which was originally obtained from Messrs. Low as one of a quantity for a few shillings. Instead of being greenish

yellow it is quite buff yellow, and there are some [illegible] airs at the base of the petals. These two handsome forms placed side by side afford a very decided contrast.

M. A. A. Peeters, of Brussels, writes that the beautiful hybrid Cypripedium × Francois Peeters, mentioned at page 352, was derived from C. bellatulum crossed with C. barbatum Crossii. Thus it is a form of the one called C. × Charles Richman.

A flower of Cattleya Gaskelliana agreeing with the C. g. delicata described at page 270, has been sent by Mr. J. Milburn, from the collection of F. M. Burton, Esq., Highfield, Gainsborough. It is a very pretty light variety.

A curious flower of Cypripedium Spicerianum comes from Messrs. Hurst & Son, of Hinckley, in which the lower sepal has almost the shape and size of the dorsal one. The disc is light green, without any purple band, and the rest white. Three normal flowers from different plants are also sent, which differ somewhat in colour.

Two fine flowers of Cattleya labiata have been sent from the collection of Hamar Bass, Esq., Byrkley, Burton-on-Trent, by Mr. Hamilton, who remarks that they seem to improve yearly, and have four, five, and six flowers on a spike. They are exceptionally large, the petals measuring over $2\frac{5}{8}$ inches broad. Flowers from two plants of the long-bulbed form of Cattleya maxima, from Messrs. Linden, which have flowered freely, are also enclosed.

A photograph of a very fine clump of Vanda cœrulea, carrying seventeen fine spikes, from the collection of the Right Hon. Joseph Chamberlain, M.P., has been sent by Mr. Burberry. Also one of the splendid specimen of Odontoglossum coronarium described at page 346. It carries seven fine racemes.

A photograph of the pretty little Oncidium iridifolium comes from Mr. T. I. Patter, of Trinidad. It is very dwarf, and is said to be almost always in flower, and altogether a very desirable little plant, though not often seen in this country. A photograph of O. × hæmatochilum is also enclosed, showing a luxuriant and well-flowered specimen.

A fine truss of Dendrobium formosum, from the collection of H. J. Elwes, Esq., Colesborne, Gloucestershire, is sent by Mr. Lane, consisting of two racemes, the best of which bears six of its beautiful flowers.

SELENIPEDIUM CAUDATUM WALLISII.

(*See* FRONTISPIECE.)

The plant represented in the frontispiece to the present volume is a very beautiful specimen of Selenipedium caudatum Wallisii, from the collection of J. T. Bennett-Poë, Esq., Holmwood, Cheshunt, which received a Cultural Commendation from the Royal Horticultural Society on June 11th last. The photograph has been kindly sent by Mr. Bennett-Poe, who remarks that he attributes his success to the liberal use of rough granular limestone, as in other respects quite the usual treatment is given. He very well points out that as the plant grows naturally on limestone rocks, it is only natural to use limestone in the potting materials. Similar treatment is given to most of the Cypripediums, and the plants thrive, and visitors remark on their vigour and health, so probably this limestone treatment has something to say to it. Whatever the cause, there can be no two opinions of the vigour and floriferousness of the beautiful specimen here illustrated.

S. caudatum Wallisii was discovered by Gustav Wallis when travelling for M. J. Linden in Ecuador, about the year 1872, and four years later by Davis, a collector for Messrs. James Veitch & Sons, in the valley of Chinchao, in the Huanuco district of Peru, some distance further south. In the latter locality it occurs on the limestone rocks in full exposure to the sun's rays, and where the range of temperature during the twenty-four hours is very considerable. It was described and figured by Reichenbach in 1873 as a distinct species under the name of Selenipedium Wallisii (*Xen. Orch.*, ii., p. 189, t. 181), but it differs so little from S. caudatum except in colour that it can hardly be considered more than a marked variety of that species. The flowers are a little smaller, and much paler and more delicate in colour. The prevailing tint is a light yellowish-green, with the side lobes of the lip pure white, somewhat spotted with reddish-brown at the outer margin. It is said to have flowered for the first time in the collecion of C. Winn, Esq., The Uplands, Selly Hill, Birmingham. An excellent figure is given in the *Orchid Album*, viii., t. 380.

It is now well known that the curious plant originally described as Uropedium Lindenii is a peloriate state of Selenipedium caudatum, in which the lip has become replaced by an ordinary petal, and, curiously enough, there is a precisely similar state of the variety Wallisii, which is illustrated in *Lindenia* (vii., p. 69, t. 321). It combines the structural details of the one with the colour of the other, and its appearance is very interesting. The peculiarity will in all probability prove permanent, as in the case of the earlier one, and in several other of these curious abnormal forms in other genera.

PHAIUS MISHMIENSIS.

The above handsome Phaius is now flowering in the Kew collection. It is the Limatodes mishmiensis, Lindl. (*Paxt Fl. Gard.*, iii. p. 36), described from dried specimens collected by Griffith, in the Mishmi Hills, Upper Assam, afterwards changed by Reichenbach to Phaius mishiensis (*Bonplandia*, v., p. 43). It has also been collected in hot valleys in Sikkim, at about 4,000 feet elevation, and below Darjeeling. It is also the plant I described as Phaius roseus (*Kew Bull.*, 1893, p. 6, 1894, p. 182), brought home by the Right Hon. Earl of Scarborough, and at first reported as a native of West Tropical Africa, though the locality was afterwards corrected. Mr. Boxall has also collected it in Lower Burma at 6,000 feet elevation. The colour of the flowers, which Lindley did not know, is a very pleasing soft rose-pink, not unlike Calanthe × Veitchii, which changes to buff in fading, and there is a very characteristic ridge of white hairs down the centre of the lip. The flowers are borne in axillary racemes. It is a really handsome species, and the wonder is that it has not been introduced long before. R. A. R.

AN IDEAL CYPRIPEDIUM LIST.

Mr. Woodall writes that the reason why he did not include Cypripedium Fairieanum in his list at page 300 was that he has never seen it in flower, though he has been shown small plants of it. C. × œnanthum superbum and C. × vexillarium he would have included some time ago, but C. × Pollettianum and C. Charlesworthii eclipse them in point of beauty, and are more fitted to encourage a new admirer, the latter, moreover, being so easily grown. With respect to C. bellatulum and its hybrids, we think it is largely a matter of taste, and Mr. Woodall admits that owing to their dwarfness they look better when hanging up. As to the new hybrids there are many which, when they become better known, will probably be considered indispensable.

ORCHID COLLECTING IN BRITISH NORTH BORNEO.

The following proclamation is taken from the *Official Gazette*, British North Borneo, for August 1st, 1895 :—

ORCHID COLLECTING.—No permit to travel for the collection of Orchids in Province Keppel and the District of Kinabalu is to be issued until further orders. Any person travelling or collecting Orchids without a permit is liable to a penalty of 500 dols., or to imprisonment under Proclamation VII. of 1890. *Sandakan*, July 9th, 1895.

DIES ORCHIDIANÆ.

ANOTHER phase of the nomenclature question has just come to the front. Speaking of Cattleya chocoensis, Mr. F. C. Lehmann remarks:—"In accordance to the laws of priority in naming and describing plants, I consider it high time that this plant should be referred to its original name, as given by Kunth." (*Gard. Chron.*, 1895, ii., p. 486.) Now, the name in question was Cymbidium candidum, and surely the writer does not seriously propose that we should return to it. He himself writes Cattleya candida, and it must require a considerable stretch of the imagination before anyone can persuade himself that it is Kunth's original. The fact is, it is a name proposed by Mr. Lehmann, and much more recent than the one which it is intended to supersede. Let us look it fairly and squarely in the face—"Cattleya candida (Kth.), Lehm."—a combination of the generic part of one old name, the specific part of another (which has proved to be erroneous), and the names of two different authors. And even all this does not enable anyone to find the plant in Kunth's work. It must be written thus:—Cattleya candida (Cymbidium, Kth.), Lehm.—before affording a clue to what Kunth intended; and even then it is an absolutely new name, and no amount of ingenious phraseology will ever make it anything else. The point of the whole matter is that certain writers think it perfectly legitimate to hunt up all these obsolete, erroneous, and sometimes even forgotten names, form them into new combinations, add their own names as authority (this, by the way, being the most important part of the whole proceeding), and then think they have a perfect right to supersede the name of any author who merely describes a plant correctly for the first time in its proper genus. And all this they do under the specious pretence of securing stability in nomenclature. The *Index Kewensis*, I believe, has set its face against this sort of thing, and adopted the name of the author who first described a plant in its correct genus, which, at all events, is more conducive to stability than the rival system, and the only one capable of securing priority for the earliest correct name. It is the boast of one of this school of reformers that in order to secure this necessary stability he had to invent thirty thousand new names, and others have since added to the list. These men talk glibly of Callista nobilis, Angorchis sesquipedalis, Phyllorchis Medusæ, &c.; they have no Dendrobiums, Angræcum is not known in their vocabulary, and as to Cirrhopetalum, they never mention it, except among the obsolete and the degraded. The list of Orchids contains hundreds of other examples of the work of these wholesale reformers, who, I doubt not, will attempt to purify the English language when they have got their present little work off hand—which, happily, is not yet.

To return to Cattleya chocoensis—or Cymbidium candidum, if the

original name must be used—it is said to be very variable and floriferous in its natural habitat, the clumps often attaining large dimensions. It is distributed over the valley of Cauca from Tulna down to the neighbourhood of Fredonia and Concordia in Antioquia, and restricted to a region that extends from about 2,000 to 3,600 feet above sea level. It grows on trees, high up on their branches in dense woods. The climate is very damp for some six months of the year, and very dry during three months in the time at which the plant flowers. The temperature ranges from about 71° to 77° F. It is said not to grow in the Choco Valley at all, hence the name is not appropriate. The flowers appear in spikes of three to five, mostly the former, and are borne aloft free of the leaves. In the best forms the flowers are pure white, with the lip pearl-rose at the tube, yellow at the base, and crimson at the apex. It is very variable in the colour of the lip, which varies from deepest crimson to tender rose, but always leaving a white margin. Two conspicuous varieties occur, one with pure white flowers, except some yellow at the base of the lip, the other with the sepals and petals deep rose, and the lip glowing crimson-purple.

This definite information is very interesting, and to some extent supplements that given at page 307 of the last volume by Mr. John E. Lager. The same gentleman gives some further notes on the habitats of the New Granadan Cattleyas on the next page to Mr. Lehmann's article above mentioned, in an interesting article on "Orchids in their home." The State of Tolima, he remarks, may be considered as the home of Cattleya Trianæ. It follows the eastern foothills of the Central Cordillera from about the second degree to about the fifth degree ot north latitude, and at its southern limit is distributed over all the three Cordilleras. C. Warscewiczii takes the place of C. Trianæ further northward, where it extends between the sixth and eighth degree of north latitude, on both the central and eastern chains, where also C. Dowiana chrysotoxa is found. Further northward, in the State of Santandar, C. Mendelii occurs, and on the eastern foothills of the eastern Cordillera grows Cattleya Schrœderæ. On the western chain, along the Rio Cauca, Cattleya chocoensis is found. Unlike its allies, it grows to a great extent in forests on level land, stretches of which are swampy and unhealthy. This Cattleya is very abundant in certain places, and grows invariably on trees. The flowering season is August and September. I do not find this Cattleya in the list given on page 266. It is often considered a variety of C. Trianæ, but from the above it would appear to be a distinct local form. I believe it is not common in cultivation.

The above remarks are from an interesting lecture given by Mr. Lager

originally reported in *American Gardening*, and one final paragraph deserves to be repeated in full, "The end is approaching. Many of the New Granadan Orchids are rapidly decreasing in quantity. Cattleya chrysotoxa is very near extinction, Miltonia vexillaria is going fast, as are also Cattleya Mendelii and Odontoglossum crispum. Miltonia vexillaria and O. crispum increase rapidly from seed, where the forests are not already destroyed, or hey would have been extinct ere this. The natives are also beginning to deal more considerately with the forests, besides which many of the land-owners, and even the respective governments, are taking precautions against the total destruction of their most beautiful jewels. And can you blame them?" No; more power to them! says

ARGUS.

THE HYBRIDIST.

CYPRIPEDIUM × CALLOSO-NIVEUM.

THIS is a very pretty little plant, derived from C. niveum ♀ and C. callosum ♂, of which a flower has been sent from the collection of R. H. Measures, Esq., The Woodlands, Streatham, with the information that it was raised by Messrs. F. Sander & Co. It is comparable with C. × Tautzianum and C. × Aphrodite, two other hybrids from C. niveum, whose second parents were respectively C. barbatum and C. Lawrenceanum, and as these are closely allied to C. callosum, the resemblance in the hybrids is readily explained. The flower is about intermediate in size and shape, but most like C. niveum in colour, being white with a trace of purple veining on the dorsal sepal and front of the lip, and some minute purple spots on the base of the petals. The dorsal sepal is ovate, 1½ inches broad, and the petals nearly 2 inches long by ¾-inch broad. The staminode is broad, with tridentate apex, and the colour white, a pair of dark reticulated blotches in the centre. It is a graceful and very pretty little plant.

CYPRIPEDIUM × ROSSIANUM.

A new hybrid, which has just flowered in the collection of H. J. Ross, Esq., of Florence, Italy. Mr. Ross writes that the label was unfortunately lost in the transport of the Orchids from Castagnola, but that it looks like C. barbatum × C. tonsum. In this we entirely agree, for seldom have we seen a hybrid which shows more clearly evidences of its descent. In the dorsal sepal it is much like C. barbatum in shape, but with less purple at the sides, and in the petals and lip the characters of C. tonsum are equally apparent, especially in the colour and markings of the petals. The leaf is also most like the latter, while the staminode is about intermediate in shape. It is very interesting, as it unmistakably combines the characters of the two parent species.

CYMBIDIUM TRACYANUM.

A short time ago Mr. H. A. Tracy, of Twickenham, with whom the above handsome plant originally appeared, asked me if I could throw any light on its origin. Was it a species or a natural hybrid? The original plant, it may be remembered, flowered quite unexpectedly in December, 1890, and being exhibited at a meeting of the Royal Horticultural Society, received a First-class Certificate. A few days later it was sold at Messrs. Protheroe and Morris's sale rooms for 75 guineas. Two or three other plants have since appeared, though none equal to the original, I believe, in point of size. A Cymbidium, said to have been received from Upper Burma, has just produced a ten-flowered raceme, in the collection of W. J. Woodhead, Esq., Elton, Maghull, Liverpool, and proves to be a form of the same, though with flowers not very much larger than C. giganteum. It would be interesting to know more about the habitat of this curious plant. Have the other plants come from Upper Burma? And is it a local form, or does it grow with anything else, as C. giganteum and C. grandiflorum (Hookerianum), for example? It is so intermediate between the two species just named that if only it were known to occur with them one would think it might be a natural hybrid between them. The flowers are striped with red-brown, as in the former, but the lip is more three-lobed, less hairy, and the keels wider apart, all of which characters place it near C. grandiflorum. It would be interesting to complete the history of this fine plant, but the necessary materials are not yet forthcoming. At present the facts point in the direction of its being a distinct geographical form, for we have not yet any evidence of the occurrence of either C. giganteum or C. Hookerianum in Upper Burma.

R. A. R.

ONCIDIUM GEERTIANUM.

The identity of this pretty little species seems to have been quite lost, since Lindley wrongly referred it as a synonym of his O. nebulosum. It was originally introduced from Guatemala, and flowered in the collection of M. A. Van Geert, of Gand, being figured and described by Prof. Charles Morren, in 1848 (*Ann. de Gand*, iv., p. 55, t. 179). Six years later it was again figured and described under the name of O. cæsium by Professor Reichenbach (*Gartenflora*, III., p. 75, t. 80) from a plant in the collection of Herr Hofrath Kiel, at Leipsic, in November, 1853, its habitat being unknown. It occasionally appears among Mexican importations, and is generally cultivated in gardens under its later name. It is allied to O. reflexum, Lindl., from the same country, but is easily distinguished by its greenish sepals and petals, and other characters. Messrs. F. Sander & Co. have recently flowered it out of an importation received from Mexico.

R. A. R.

A CURIOUS CYPRIPEDIUM INSIGNE.

THE annexed illustration shows the remarkable plant of Cypripedium insigne which flowered a year ago in the collection of W. M. Appleton, Esq., of Weston-super-Mare, as recorded at page 11. It is hardly necessary to add that the figure is exact in every particular, having been reproduced by the well-known process from a photograph sent by Mr. Appleton. It is one of the so-called "montanum," forms, but one flower

Fig. 15—CYPRIPEDIUM INSIGNE ABNORMAL.

alone is normal, the petals of all the others being transformed into lips, which clasp the normal lip as here shown. The anthers of these five flowers are completely wanting, or to speak more correctly, they have wandered from their proper course and coalesced with the petals to form two additional lips. The column and staminode are both smaller than usual. The cause of the malformation is at present uncertain, though Mr. Appleton is inclined to attribute it to the plant being rather pot-bound. It remains to be seen if the peculiarity is permanent. In any case it is

very remarkable, though floriculturally no one will venture to consider it an improvement.

Another curious example has flowered with Messrs. Hurst & Son, Purbage Nurseries, near Hinckley. A scape has developed a leaf-like bract, nearly four inches long, and two flowers. The upper flower is normal, but the lower only has the lateral sepals free, and the staminode suppressed, while the lip is practically reduced to the two united side-lobes; being channelled underneath, bilobed at the apex, and the front lobe wanting. A third curious malformation of C. insigne, which appeared in the collection of T. W. Swinburne, Esq., was described at page 322, and a fourth from the collection of Mrs. Barton, N. Devon, has lost the staminode, lip and petals, though the remaining organs are perfect.

These curious malformations generally excite a good deal of curiosity, and the question is often asked what can be the cause of their production. Briefly, they may be described as partial reversions to an ancestral condition, and they are chiefly interesting because of the light they throw on the structure of an Orchid flower, and its development from a typical monocotyledon, to which subject a succeeding article is devoted.

CŒLOGYNE TRIPLICATULA.

This is a rather fine Cœlogyne, originally introduced from Moulmein by the Rev. C. S. Parish, which seems to have been almost or quite lost sight of in gardens, at all events so far as the name is concerned, though it has recently re-appeared in at least two different collections, and may exist in others unrecognised. It was originally described by Reichenbach in 1864 (*Bot. Zeit.*, xxii., p. 415), from a plant which flowered in the collection of the late John Day, Esq., at Tottenham, and was afterwards figured in *Xenia Orchidacea* (II., p. 159, t. 166). It also existed in the collection of the late W. Wilson Saunders, Esq. It has re-appeared in the collection M. A. Van Imschoot, of Mont-St.-Amand, Gand, and of M. Godefroy Lebeuf, of Argenteuil. It is closely allied to C. fuliginosa, Lindl., but is markedly different both in the shape of the lip and in colour. Both the sides of the front lobe and the apex of the side lobes are reflexed, the margin less fimbriate, and the keels different. The colour is buff-yellow, or almost light brownish, and the front of the lip heavily marked with deep brown. The racemes bear two flowers, but like several others in this group they come in succession, one expanding only when the other is over. In the *Flora of British India* it has been confused with C. fuliginosa, but is easily separated by the characters above pointed out, and especially by the shape of the lip. Should any one else possess the plant they will easily be able to recognise it from this note.

R. A. R.

ONCIDIUM DICHROMUM.

The history of the mysterious Odontoglossum bicolor, Lindl., was given at page 69 of the present volume, where, on the strength of the original drawing, I reduced it as a synonym of Oncidium aureum, Lindl. This view now proves to be erroneous, for Messrs. F. Sander & Co. have just introduced a plant from Peru which is identical with the original drawing of Ruiz and Pavon, and though very near O. aureum is still quite distinct from it, and in fact is a much finer species. It agrees well in habit and colour of flower, but the sepals and petals are larger and broader, measuring 6 to 7 lines long, by 4 to 5 broad, and the lip of the dried flowers $1\frac{1}{4}$ inches in diameter, broadly obovate, truncate, and apiculate. The sepals and petals are reddish purple, and the lip bright yellow. The panicle has three side branches and about twenty-four flowers. Lindley's drawing is a copy of one made by Matthews from Ruiz and Pavon's original kept at Lima, and the dried materials now brought prove it to be very accurate. No such plant having appeared after the lapse of over a century, I thought it must be an exaggeration of O. aureum. The two are nearly allied, but besides the larger size of the present one, and the differently shaped lip, there are a few free calli in front of the keels which are not found in O. aureum. As there is already a species called Oncidium bicolor Lindl., (since wrongly reduced by the same author to O. Martianum, Lindl.) the specific name of the present one must be changed, but the idea will still be preserved by calling it O. dichromum. The synonymy may be obtained from the article above mentioned.

R. A. Rolfe.

NOVELTIES.

Masdevallia Forgetiana, Kranzl.—A species from North Brazil, introduced by Messrs. F. Sander & Co., St. Albans, through their collector, Mr. Forget. It is evidently closely allied to M. infracta, Lindl., but the tube of the sepals is described as of a tender apricot tint outside, and a little darker inside.—*Gard. Chron.*, Oct. 26th, p. 484.

Anœctochilus Sanderianus, Kranzl. — A species with prettily variegated leaves, introduced by Messrs. F. Sander & Co., St. Albans, from the Sunda Islands. It may be a new species, but the genus is as likely as not to be incorrect, nothing whatever being known of the flowers.—*Gard. Chron.*, Oct. 26th, p. 484.

Masdevallia eclyptrata, Kranzl.—A species which flowered in the Berlin Botanic Garden in August last. The bract is described as like that of M. cucullata, Lindl., and the flower orange-yellow at the base, and approaching brick-red at the top. How does it differ from M. corniculata, Rchb. f. ?—*Gard. Chron.*, Nov. 16th, p. 577.

THE STRUCTURE OF AN ORCHID FLOWER.

The majority of Orchid flowers are so complex in structure that it is by no means an easy matter to make out the exact plan on which they are arranged. Microscopical examination, however, has shown it to be a modification of the monocotyledonous type, as all the organs of a typical monocotyledon—a lily, for example—have been traced in one form or another in the flowers of different Orchids, and the curious malformations which from time to time appear frequently afford some striking confirmations of this theory. A few remarks on the subject may therefore be interesting to readers of the *Orchid Review*.

The two principal characters in which an Orchid flower differs from that of a typical monocotyledon are, the modification of one of the petals into an organ called the lip, and the consolidation ot the sexual organs into a central column. The plan is the same in each case, though the details are so different. This plan is shown in the annexed diagram, which will enable the following remarks to be understood.

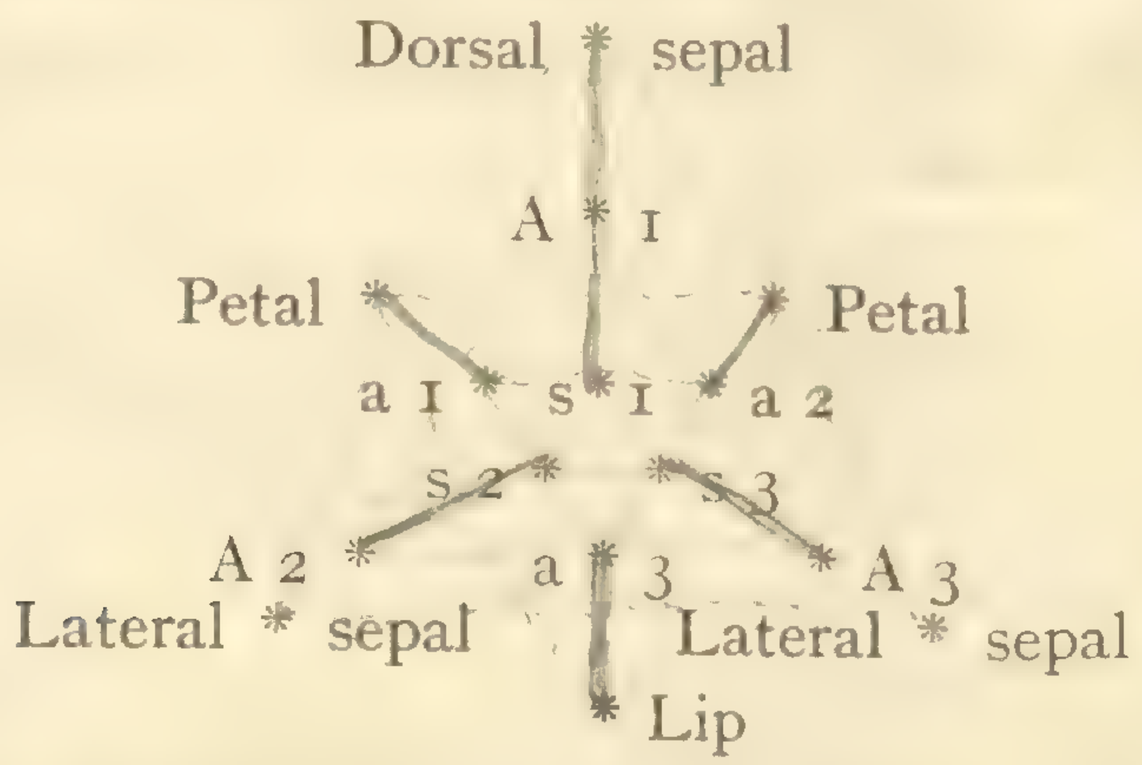

DIAGRAM ILLUSTRATING PLAN OF ORCHID STRUCTURE.

The asterisks in the above diagram represent the fifteen organs of which a monocotyledonous flower is composed, and which are arranged in five alternating whorls of three each. The outer whorl consists of three sepals, the second whorl of three petals, the third and fourth of an outer and an inner row of stamens, six in all, and the fifth or central one of three carpels, which are generally confluent. In an Orchid flower all these are either actually or potentially present, though owing to the amount of cohesion which has taken place the fact is not at first apparent. Each of these organs is supplied with a central fibro-vascular bundle, or cord, and if these are traced back to the pedicel it will be found that they arise from six groups of cords, arranged in a single circle, three of which divide each into three radiating branches, and the remaining ones each into two, making fifteen in all. Taking these groups individually it will be seen that the one which feeds the dorsal sepal sends also a branch into A 1 (the only stamen of most Orchids, and the staminode of Cypripedium) and into s 1 (the lobe of the stigma which is modified into the rostellum). In a similar

way A 2 and s 2 are branches of the cord which feeds one lateral sepal, while A 3 and s 3 are similarly derived from the other. The cords marked a 1 and a 2 (the fertile stamens of Cypripedium, and the column-wings of many other Orchids) are branches from the left-hand and right-hand petals, respectively, while a 3 comes from the group which feeds the lip.

We may now trace the manner in which these several organs are combined. The three sepals and two lateral petals call for no remark, but coming to the median petal we find that two stamens of the outer whorl (A 2 and A 3) are united with it to form the lip, which is thus a compound organ, consisting of one petal and two petaloid staminodes. The seven remaining organs (the three stamens of the inner whorl, together with A 1 and the three stigmas) unite to form the central column. Of these, A 1 (the median stamen of the outer whorl) is the single fertile anther of the sub-order Monandræ. In the small suborder Diandræ it is also present as a perfect anther in Neuwiedia, but modified into a shield-shaped staminode in Cypripedium and Selenipedium, and into a linear staminode in Apostasia, while in Adactylus it is entirely suppressed. The two lateral stamens of the inner whorl are uniformly present as perfect anthers in the suborder Diandræ, but in Monandræ they form the teeth or wings of the column. The median stamen of the inner whorl, a 3, forms the front of the column, or in some cases is entirely suppressed. Of the three stigmatic lobes, s 2 and s 3 are generally confluent into a single stigma, though occasionally free, as in some Habenarias and Neottieæ, while throughout the Monandræ (except in the degraded Cephalanthera) s 3 is modified into the rostellum, which secretes a viscid fluid for the purpose of attaching the pollinia to the bodies of insects which visit the flowers, and also serves to prevent the pollen from falling on to the stigma of the same flower. This organ is not found in the Diandræ. In the tribe Apostasieæ the three lobes are simply confluent into a slightly three-lobed stigma, while in Cypripedieæ this organ is composed of s 2 and s 3, s 1 being suppressed.

The way these progressive modifications have been effected is readily seen. In the ancestral group Apostasieæ the whole structure is very simple. The three stigmas are simply confluent, the anthers are linear, and the pollen dry, while the lip simply consists of the median petal, without the addition of the staminodes A 2 and A 3. Neuweidia has slender filaments, which are only united with the style at the base into a very short column, while the anthers are versatile, like those of some liliaceous plant. The three stamens are the median one of the outer whorl, and the lateral ones of the inner whorl (A 1, a 1 and a 2), all on the back of the flower, while the three remaining stamens, A 2, A 3, and a 3 are simply suppresed. In Apostasia A 1 is reduced to a linear staminode, adnate to the style, and in Adactylus it disappears altogether. In Cypripedieæ A 2 and A 3 (which had become lost) re-appear, but in the guise of staminodes, and confluent

with the median petal, or lip, of which they form the two side lobes, and as A 1 forms part of the column and the lateral petals have no such appendages, it is clear that A 2 and A 3 have wandered from their proper course. The filaments also are more confluent with the column, and the anthers more reduced, while the pollen has become viscid, and one lobe of the stigma (s 3) suppressed. In short the flower has become very irregular and highly specialised. In Monandræ further changes take place. A 1 is now invariably the fertile anther, while a 1 and a 2 are reduced to staminodial appendages, as wings or teeth of the column, or they may be entirely suppressed. The rostellum also appears for the first time, and, corellated with this, the pollen grains now become variously aggregated together. The effect of these and other progressive modifications has been to render them increasingly dependent on particular insects for the fertilisation of the flowers.

The foregoing remarks not only explain the structure of an Orchid flower, but also help us to understand many of the malformations which from time to time appear. Take for example a four-flowered spike of Cattleya labiata which has just appeared with Messrs. Hugh Low & Co., every flower having three perfect anthers, but the lips developed as ordinary petals. This is a case of reversion. The two stamens A 2 and A 3, instead of uniting with the lip and being modified into petaloid staminodes, have being carried up with the column and developed into perfect anthers, precisely as in the case of A 1, the column now being perfectly straight, and the stigmas abortive. The stamens having become dissociated from the median petal that organ resembles the lateral petals, and thus the flower becomes perfectly regular. A similar flower has previously been recorded (Vol. II., p. 358), but in that case a second flower on the same raceme had two of the petals transformed into lips. The column was imperfect, and without either anther or rostellum, the latter having reverted to its original state, and being confluent with the two other stigmatic lobes into a terminal stigma. In this flower it is probable that A 1 had wandered from its proper course, and becoming confluent with a lateral petal transformed it into a lip. These two cases are very instructive.

In the case of Cypripedium insigne with three lips, a 1 and a 2, instead of going up with the column and forming perfect anthers, had become confluent with the two lateral petals, and were transformed into petaloid staminodes, as in the case of the normal lip. This, however, cannot be considered as a case of reversion. The flower of the same species, with the side lobes of the lip alone developed, owed its peculiarity to the suppression of the median petal.

The wings of the column of Monandræ we have already seen to be staminodes, representing a 1 and a 2, but these occasionally bear perfect anthers, in which case the three anthers are situated on the back of the

column, and the lip normally developed. A case is on record of a flower with five perfect anthers, which was due to the reversion of the lateral stamens of both the outer and inner whorls into perfect anthers. The median stamen of the inner whorl, a 3, is seldom perfect, but the peloriate state of Selenipedium caudatum, known as Uropedium, affords an example.

Thus we have traced the presence of all the fifteen organs of a typical monocotyledon, and the occasional development of every one of the six anthers in a perfect condition. An example of the flower breaking up into its original component parts is seen in the so-called double form of Epidendrum vitellinum, which consists of twelve petaloid organs regularly arranged in four whorls, decreasing in size towards the centre. In this case the stigmatic whorl appears to be suppressed.

Some malformed flowers owe their peculiarities to irregular suppression of various organs of the flower, and may be considered as cripples, though in many cases some reversion to the ancestral character may be traced. It is remarkable how great an amount of modification, cohesion, abortion, and change of function may be seen in the various parts of an Orchid flower, and it is very interesting to be able to trace the progressive modifications which have been effected in its descent from some original monocotyledonous plant, as well as to note the curious reversions to the ancestral character which from time to time occur.

R. A. R.

AN AMATEUR'S NOTES.

THE brilliant autumn-flowering Calanthes have now begun to bloom, and will soon be at their best. C. vestita, with its varieties, and the hybrids between them and C. rosea, are among the most useful plants for this particular season, and are now becoming rather numerous. C. × Veitchii, I think, must be one of the most popular hybrids yet raised, as it is so easily propagated that everyone can grow it in quantity. Some of the newer kinds may perhaps ultimately supersede it, but at present it fully holds its own as one of the best. It quite puts C. rosea in the shade, having the good constitution and floriferous habit of the other parent, C. vestita, with which it contrasts so well.

Among the Cypripediums now at their best are C. insigne and C. Spicerianum, together with C. venustum and C. purpuratum. The two latter are most effective at this season, and if well grown very floriferous. I have been much struck with the great variety found among the recent importations of the first-named species, particularly in the size and arrangement of the spots, but to some extent also in the ground colour. Quite a series of varieties could be selected. Some of the forms of C. × Leeanum are now out, and, together with some of those previously mentioned, make quite a brave show. Even a flower or two of C. Charlesworthii linger yet. C.

Haynaldianum is also flowering well, and several other forms are pushing up their scapes very freely, promising a good succession of bloom. Selenipedium Schlimii and some of its hybrids are also flowering freely.

The Oncidiums are now very gay, particularly O. crispum, Forbesii, and varicosum, the variety Rogersii of the latter being a great improvement on the type. The flowers of these beautiful plants, arranged as they are in loose branching panicles, might almost be compared to swarms of gay butterflies. Several of the smaller species are also very effective, and amongst them I must not forget the elegant little O. cheirophorum.

Trichosma suavis is a plant everyone should grow. It flowers very freely at this season, and is deliciously fragrant, besides giving little trouble to grow it well. Sophronitis grandiflora and Lælia × Eyermaniana are now well out, also Maxillaria picta and Angræcum Leonis, together with a number of less showy things, and altogether the houses are particularly gay just at present.

Among the plants now throwing up strongly must be enumerated the winter-flowering species of Phalænopsis, the Zygopetalums, Lælia anceps, and several others which I have not time to enumerate at present, though they will doubtless form materials for future notes.

AMATEUR.

CALENDAR OF OPERATIONS FOR DECEMBER.

By H. A. BURBERRY, Highbury, Moor Green, Birmingham.

DECEMBER is a month of comparative inactivity with all genera of Orchids, many are at rest but still require careful treatment and watchful attendance, in order to keep them plump and healthy. The growth of others moves but slowly along, while those producing flower spikes are loth to expand their blossoms. Indeed, during the depth of winter it is not unusual for many of the flower buds (and even the whole spikes) to turn yellow and drop off, which is of course most vexing to the grower, because the beauty of the plant is thus lost until another season. This premature decay of the flower buds is the result of a variety of causes. One prolific source of mischief is the atmosphere becoming impregnated with some foreign substance which is most distasteful to the tender exotic. This occurs mostly in large towns. But even in clear country places misfortunes in this direction are not unknown, and in many instances the grower is more or less powerless to prevent them. It is exceedingly difficult at times to maintain an artificial atmosphere during the short dark days of winter, which is all that the inmates of the different departments require. We must however, do our best to avert the casualties which might otherwise occur.

The following temperatures should be maintained as nearly as possible under the circumstances and with the means at command :—

THE COOL HOUSE.—Day, with sun, 60° ; without sun, 50° to 55° ; night, 50° ; morning, 45° to 50°.

THE INTERMEDIATE HOUSES.—Day, with sun, 65° to 70° ; without sun, 60° ; night, 58° to 60° ; morning, 55° to 58°.

THE WARM HOUSE.—Day, with sun, 70° to 75° ; without sun, 65° to 70° ; night, 60° to 65° ; morning, 60°.

As to the best means of producing the most suitable conditions for the plants I can say but little more here, as, knowing what an important matter it is, I have devoted considerable space to the subject in previous Calendars. I may, however, just mention the matter of protection from cold during winter, which seems to be a most seasonable subject, and one which should not be forgotten. To cover the roof glass with garden mats or something similar during rigorous winter weather, especially at night time, is not only a great saving in fuel, but at the same time results in much more healthy conditions within the house. The ends of the structure also, which are of glass, are sometimes fearfully cold and damp places, and although light is always of great importance, yet I do not hesitate for one moment when necessary to mat up such ends permanently during the worst winter months. The roof covering should, for obvious reasons, be conveniently arranged for putting on and off night and morning.

During December flowers are naturally scarce, and those which bloom this month are highly prized. It is fortunate that there are a good many species to come in at this dull period. The Cattleyas labiata and Bowringiana being now past, are replaced with the deciduous Calanthes, which will, together with the Mexican Lælias, continue to make a very useful show for some time to come. Calanthes this year have been affected with a considerable amount of black spot on the foliage and pseudobulbs. It is a sort of disease to which this species is susceptible, and which seems to give more trouble in some localities than in others, for which I am unable to suggest a reason. The cause of its abundance this season may probably be traced, as in the case of the Dendrobiums, to the bad summer of 1894 and the late terrible winter. The summer through which we have just passed has, however, seemed to work miracles in the way of counteracting the previous evil influences. Take, for instance, the Dendrobiums, which have finished up their season's growth much more satisfactorily than at one time seemed possible. The Calanthes have also done better than the early part of the season seemed to warrant ; indeed, it seems to me that the flower spikes will be very little, if any, below the average standard. The same may be said respecting the Mexican Lælias, such as L. auceps in variety, L. autumnalis, L. furfuracea, L. albida, L. × Gouldiana, and L. × Eyermaniana. Their first attempt to grow in the spring caused some little uneasiness, but as the summer wore on disquieting doubts soon became lessened, for with an abundance of light and air they quickly responded, and the splendid month

of September finally dispelled any lingering misgivings as to their future welfare. On the whole, perhaps, the actual number of spikes is a few less than last year, but as a set off the flowers themselves are evidently coming of a finer quality.

Cypripediums are not quite so sensitive to climatal changes as are many other genera. Of course they are affected to some extent, but most of them seem to have greater power of endurance, and injury is not so quickly noticeable. Cypripediums are therefore invaluable for winter blooming. Mr. C. Winn, of Selly Hill, Birmingham, has a splendid healthy and almost complete collection of them, and by his kindness I had the pleasure of viewing them a few weeks ago. The species and hybrids, the varieties and sub-varieties, are legion, and to attempt to do justice by here recording their names is more than space will admit. C. × selligerum, C. × Morganiæ, C. × Niobe, C. × Arthurianum, C. × œnanthum superbum, C. × vexillarium, C. × Brunianum, C. × Medea, and Selenipedium × leucorrhodum were well represented. A quantity of C. insigne in great variety was also conspicuous, and I saw there a yellow variety differing slightly from C. insigne Sanderæ.

A fine Brassia is now in bloom, bearing a spike of its large creamy and very dark purple flowers. Brassias, I think, are a little neglected in cultivation ; rarely does one see them represented very strongly. True, the flowers of some of the species are of a somewhat sombre hue, but there are others which are most striking, and always sure to attract attention, even if surrounded with flowers of more brilliant colours. B. brachiata is one of these, as are also B. maculata, B. verrucosa, B. Lawrenceana, and B. caudata. The culture of Brassias is very simple. Their requirements are those of the Oncidiums, and the position given should be one at the warmest end of the Intermediate or Cattleya House.

Cattleya Percivaliana, which is the first of the labiata section to open its blossoms in the new year, is now commencing to push its flower spikes, and should be given a light position in the Warm house until the flowers have expanded, for it often happens if this precaution is not taken that the flower buds turn yellow and die long before they can emerge from the sheath. This premature decay shows that the ordinary Cattleya house is rather too cold for this species at this season.

Cymbidium giganteum is now in bloom. It is a splendid plant to grow for winter blooming, and if it is kept fairly dry the flowers last a very long time in perfection. C. Mastersii and C. elegans are also flowering, while C. eburneum and C. Lowianum are just pushing forth their flower spikes. Cymbidiums do not take kindly to root disturbance, and are usually some little time before they finally recover from the effects of repotting. This operation must, of course, be done occasionally, but they should not pass through that operation before it becomes really necessary. When done it

is best performed in the spring months in a compost of fibrous loam and peat in equal proportions, with sharp silver sand. They should be watered with great moderation during the winter months, and placed at the coolest end of the Intermediate or Cattleya house. Lælia Perrinii is very pretty, and has now just passed out of flower. Unfortunately, its usefulness is greatly curtailed on account of its flowers being so short-lived. It should grow freely with the Cattleyas.

Dendrobiums are now resting, and it is well that they should be inactive at this time of the year, and not be unduly excited until the days begin to lengthen and the sun gain power. No good purpose can be served by trying to force them to flower in mid-winter. For the cool resting kinds guard againt the possibility of the temperature becoming too cool for them, for if this happens the plants, although showing no outward signs of injury at the time, are greatly weakened, and often collapse during the following growing season. From 50° to 56° is a good figure to aim at. The thermometer will, of course, fall below and rise above for short periods, which will do no harm. Those plants which were the first to mature their new pseudobulbs will naturally be the first to produce flower buds, and when this is seen they should be given slight encouragement, so that they gradually grow and expand. D. Wardianum should be kept back more than any other, and not allowed to flower before March, if possible. There are some few Dendrobes which are never really at rest, but are continually growing, such as D. sanguinolentum, D. × rhodostoma, D. Dearei, D. Hookerianum, and D. Maccarthiæ. These and other similar kinds should be allowed to grow gently on, and not rested in the same way as the others.

A correspondent asks, "Does the fact that my Odontoglossums are very slow in forming their bulbs imply any wrong treatment?" No! certainly not. I think it may generally be accepted, so long as Odontoglossums are healthy-looking and strong, that slowness of growth is a favourable sign, and would indicate good treatment rather than wrong. Well-grown Odontoglossums generally seem slow growing, but they are also sure, and it is this latter which indicates good culture. If there be any attempt to force them on faster than they seem disposed to move when properly cared for, good results are by no means certain. In other words, so long as the new pseudobulbs of Odontoglots and Oncidiums finally develop well and strong, and, if anything, a little larger than the preceding ones, it is best not to care how long they take to do so.

There are two common errors in cultivation, which I have not failed to notice often take place with inexperienced growers during the two or three following months. The first is by giving those species that are in growth—warm and cool alike—too much water at the roots. The second is keeping those kinds that are dormant too dry, and causing them to become shrivelled up and yellow.

During this month a good supply of sphagnum moss should be got to hand, otherwise it often happens that it is locked up in the strong grip of frost just when we could use it in the new year, the work being retarded in consequence.

ORCHID PORTRAITS.

Anacamptis pyramidalis, Rich.—*Rev. Hort. Belge*, Nov., p. 241, fig. A.

Angræcum Kotschyi, Rchb. f.—*Bot. Mag.*, t. 7442.

Catasetum Lemosii, Rolfe.—*Bot. Mag.*, t. 7444.

Cattleya Harrisoniæ.—*Garden*, Nov. 16, p. 380, t. 1040.

Cattleya labiata Cooksonæ.—*Gard. Mag.*, Nov. 16, p. 731, with fig.

Cattleya Mendelii (variegated lip).—*Gard. Chron.*, Oct. 26, p. 495, fig. 85.

Cattleya velutina punctulata.—*Gartenflora*, Nov. 1, p. 578, t. 1420, fig. C.

Cirrhopetalum Rothschildianum.—*Gard. Mag.*, Oct. 26, p. 677, with fig.

Houlletia tigrina.—*Gard. Chron.*, Nov. 9, p. 549, fig. 95.

Odontoglossum coronarium.—*Gard. Chron.*, Oct. 26, p. 489, fig. 84.

Ophrys muscifera, Huds.—*Rev. Hort. Belge*, Nov., p. 241, fig. B.

Orchis maculata, L.—*Rev. Hort. Belge*, Nov., p. 241, fig. C.

Platyclinis glumacea.—*Gard. Chron.*, Nov. 9, p. 553, supplement.

Selenipedium Sargentianum, Rolfe.—*Bot. Mag.*, t. 7446.

Spathoglottis Kimballiana, Sander.—*Bot. Mag.*, t. 7443.

BELGIAN NOTES.

Orchids continue to enjoy a well-merited popularity. Not an exhibition or a fête of any importance is held, not a drawing-room or a banquet, without Orchids being included among the floral decorations.

Recently the Catasetums of Messrs. Linden have been centres of attraction at the meeting of the Orchidéene, Brussels, the November Meeting at Gand, the horticultural exhibition at Brussels, &c., an account of which has been given in the various journals.

At the Brussels Exhibition in September, we observed two splendid plants of Cypripedium × Morganiæ from M. Jules Hye and M. Peeters, Miltonia × Bluntii Lubbersiana from the former, with five beautiful flowers, and a splendid specimen of Cypripedium Rothschildianum from M. A. Van Imschoot, with three scapes and nine large and brilliantly coloured flowers.

At the last meeting at Gand M. Jules Hye exhibited a fine hybrid between Lælia pumila ♀ and Lælio-cattleya × elegans ♂, called L.-c. ×

Diana, the flower most resembling the former, but modified in shape and with the front of the lip deep crimson-purple.

At the meeting of the Orchidéene, among various remarkable Orchids, we noticed the pretty little Cattleya × Mantini, already described in these pages, from M. G. Mantin, a superb specimen of C. labiata with about thirty exceptionally fine flowers, from the royal collection at Lacken, under the charge of M. Knight, and some fine specimens from L'Horticulture Internationale, including C. labiata marmorata with prettily flamed and variegated segments, C. Eldorada alba, pure white with deep orange throat, a beautiful example of Vanda Sanderiana, Oncidium Forbesii with a very fine panicle of flowers, a beautiful yellow form of Cypripedium insigne, &c.

At an Exhibition of Chrysanthemums at Antwerp some beautiful Orchids were staged. M. Jules Hye sent the remarkable Cattleya labiata Peetersii, Cypripedium insigne Sanderæ, and Miltonia vexillaria Leopoldi. M. Vuylsteke also sent some fine Orchids, and M. Guill. De Bosschere also included many, both plants and cut flowers, in a very effective collection of decorative plants.

In the collections of M. A. Van Imschoot, and M. Jules Hye, as well as at the establishments of M. Vuylsteke and L'Horticulture Internationale, are many hybrid seedlings, which will probably yield many surprises.

CH. DE BOSSCHERE.

ORCHIDS AT THE ROYAL HORTICULTURAL SOCIETY.

THE show of Orchids at the Drill Hall, James Street, Westminster, on October 29th, was smaller than usual, though several interesting things were staged.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), exhibited a group of choice flowers, to which a Silver Flora Medal was given. It contained half-a-dozen fine forms of Cattleya Dowiana, one of which had the sepals and petals beautifully marbled with rosy lilac, as in C. D. marmorata. It was called C. D. Johnsoniana, and received a First-class Certificate. It also contained several handsome forms of C. labiata, one of which had the flowers prettily flaked with purple: Cypripedium Spicerianum virescens, with pallid greenish flowers, and C. × Edwardii.

F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey (gr. Mr. Stafford), received a Silver Banksian Medal for a group of fine things, including Cattleya Bowringiana gigantea, an unusually large and richly-coloured form, which received an Award of Merit: the beautiful C. × Harrisii: the charming white C. l. Cooksonæ, and a fine lot of cut spikes of other handsome forms of C. labiata.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), also received a Silver Banksian Medal for an interesting group, including his charming white variety of Cattleya labiata, with pink veined lip, C. × Hardyana, Cypripedium × Allanianum, a fine hybrid, to which an Award of Merit was given, C. × Arthurianum, C. × Leeanum superbum, C. × Zeno, C. × Charles Richman, &c.

M. Georges Mantin, Châteaux de Bel Air, Olivet, Loiret, France, sent a fine plant of Cattleya × Mantini, to which a First-class Certificate was given. It was described at page 365 of our last volume.

Sir Trevor Lawrence, Bart., Burford, Dorking (gr. Mr. White), sent the rare old Houlletia tigrina, bearing a decumbent raceme of white flowers freckled with rose, to which a Botanical Certificate was given.

W. Bryant, Esq., Stoke Park, Slough (gr. Mr. Kemp), sent a fine inflorescence of Cattleya labiata, with richly-coloured flowers.

W. C. Clarke, Esq., Sefton Park, Liverpool, sent some good forms of Cypripedium insigne, and a seedling from C. villosum crossed with C. × Leeanum superbum.

G. C. Rafael, Esq., Castle Hill, Englefield Green (gr. Mr. Adams), exhibited the rare and interesting Zygopetalum Burkei, and fine forms of Cattleya labiata and Vanda cœrulea.

Reginald Young, Esq., Sefton Park, Liverpool (gr. Mr. Poyntz), sent Cattleya labiata Youngiana, Lælia pumila, and Cypripedium × Clotho (C. × politum ♀ × C. Boxallii atratum ♂).

Messrs. James Veitch & Sons, Chelsea, sent several very interesting hybrids. Cattleya × Mantini, of which two forms were shown, received a First-class Certificate, and Lælio-cattleya × Euphrosyne an Award of Merit. Cattleya × Eurydice (C. labiata ♀ × C. Aclandiæ ♂), was a very pretty dwarf plant, with lavender-pink sepals, slightly spotted with purple, and a rich crimson lip, most approaching the latter in shape. Lælio-cattleya × Statteriana and two hybrid Cypripediums were also included in the group.

Messrs. Hugh Low & Co., Clapton, staged a brilliant group, to which a Silver Flora Medal was given. It contained numerous fine forms of Cattleya labiata, Oncidium × hæmatochilum, O. varicosum, O. ornithorhynchum album, Cypripedium Charlesworthii unicolor, a small form with the dorsal sepal uniformly rose-coloured, and other showy things. An Award of Merit was given to Cypripedium insigne Laura Kimball, a beautiful form allied to C. i. Sanderæ, but the colour clear buff-yellow, with the usual white apex to the dorsal sepal.

Messrs. F. Sander & Co., St. Albans, staged a group of good things, including some very fine forms of Cattleya labiata, Lælia pumila, Catasetum Christyanum, Calanthe × Florence, and C. × Clive, some pretty pieces of Sophronitis grandiflora, a pan of Habenaria Susannæ, Cypripediums, &c.

Messrs. W. L. Lewis & Co., Southgate, staged a small group, including several good Cattleya labiata, Oncidium varicosum, O. prætextum, Cypripedium insigne Maulei, &c.

M. G. Truffaut, Rue des Chantiers, Versailles, sent the prettly little Lælio-cattleya × Andreana, derived from Cattleya bicolor ♀ and Lælio-cattleya × elegans ♂, and most resembling the latter.

At the meeting on November 12th there was a fair average display of Orchids, including several fine things to which special awards were given.

The President, Sir Trevor Lawrence, Bart., Burford, Dorking, (gr. Mr. White), exhibited two very fine Orchids, Lueddemannia triloba, Rolfe, an Andine species introduced by Lehmann, bearing a raceme two feet long with thirty-three flowers, to which a First-class Certificate was given; and a fine form of Cypripedium × Pollettianum called Burford Beauty (C. × calophyllum ♀ × C. × œnanthum superbum ♂), to which an Award of Merit was given.

C. Ingram, Esq., Elstead House, Godalming (gr. Mr. Bond), showed three fine hybrids, each of which received an Award of Merit. These were Cattleya × Lady Ingram (C. Eldorado ♀ × C. Dowiana aurea ♂), bearing a three-flowered inflorescence of pale yellow flowers, with the tube of the lip golden-yellow and the front lobe veined with rose; C. × Cecilia (C. Lawrenceana ♀ × C. Trianæ ♂), most like the former but paler in colour; and Lælio-cattleya × Othello (C. maxima ♀ × L.-c. × elegans Turneri ♂), most resembling the latter.

T. Statter, Esq., Stand Hall, Whitefield, Manchester (gr. Mr. Johnson), staged a fine group of cut spikes of Cattleya Dowiana varieties, Cypripedium × vexillarium, C. × Edwardii, &c., a Silver Banksian Medal being awarded.

R. I. Measures, Esq., Cambridge Lodge, Camberwell (gr. Mr. Chapman), showed Cypripedium × Olenus (C. bellatulum ♀ × C. ciliolare ♂), Pleurothallis longissima, and Masdevallia abbreviata, Botanical Certificates being awarded to the two latter.

F. W. Moore, Esq., Royal Botanic Garden, Glasnevin, sent Phalænopsis denticulata, Spathoglottis pubescens, and the rare Eriopsis rutidobulbon, the two former receiving Botanical Certificates.

Mr. Gulzow, Bexley Heath, received a Silver Banksian Medal for a mixed group, containing some good Cattleyas, &c., with foliage plants.

J. Gurney Fowler, Esq., Glebelands, S. Woodford (gr. Mr. Davies), exhibited a fine inflorescence of Cymbidium Traceyanum.

T. W. Swinburne, Esq., Corndean Hall, Winchcombe, Cheltenham, sent a twin-flowered spike of Cypripedium × Ashburtoniæ, and two similar ones of C. insigne.

Messrs. James Veitch & Sons, Chelsea, exhibited a remarkably fine group, to which a Silver Flora Medal was given: three of the plants being

selected for special awards. Lælio-cattleya × callistoglossa ignescens, a magnificent form, and Cypripedium × Milo grandis (C. insigne Chantini ♀ × C. × œnanthum superbum ♂) each received a First-class Certificate, and Lælio-cattleya × Semiramis (L. Perrinii ♀ × C. Gaskelliana ♂) an Award of Merit. Other handsome things were L.-c. × Decia, L.-c. × Pallas superba, Cattleya × leucoglossa, Phalænopsis × intermedia var. Vesta, the very pretty Epidendrum Wallisïo-ciliare, Miltonia spectabilis Moreliana, various Cypripediums, &c.

Messrs. F. Sander & Co., St. Albans, received a Silver Banksian Medal for a fine group in which was a fine hybrid Cypripedium called C. × Countess of Salisbury (C. bellatulum ♀ × C. barbatum superbum ♂) to which a First-class Certificate was awarded. Saccolabium acutifolium also received a Botanical Certificate. Other interesting things were a fine pan of Habenaria Susannæ, Anœctochilus Sanderianus, Cymbidium × Winnianum, Trichopilia brevis, Catasetum Christyanum, Dendrobium aqueum, Cœlogyne fuscescens, &c., also some good forms of Cattleya labiata, including a fine white variety called Miss Clara Measures, with a purple disc to the lip.

Messrs. B. S. Williams & Son, Upper Holloway, received a Silver Banksian Medal for an interesting group, including Pescatorea Roezlii and P. Klabochorum, Cœlogyne Gardneriana, to which a Botanical Certificate was given, Catasetum × splendens aureum, and a number of fine Cypripediums, including C. insigne Wallacei, C. × Adonis, and others.

CATTLEYA LABIATA DIPHYLLOUS.

A very interesting photograph has been sent by F. H. Moore, Esq., Royal Infirmary, Liverpool, showing a flowering plant of Cattleya labiata with one diphyllous pseudobulb. A flower from the plant is also enclosed, showing it to be typical C. labiata. We do not remember to have seen such an example before among monophyllous Cattleyas, and consider it to be a case of reversion to an ancestral condition. In any case its appearance is extremely interesting.

CORRESPONDENCE, &c.

G. B., Hamburg. Cymbidium giganteum.

A. W. H., California. Lælia anceps Sanderiana.

G. H., Wakefield. The plant sent as Cattleya gloriosa is a good ordinary C. labiata. There is no such species as C. gloriosa, and the plant originally so named is only a white form of C. labiata, which flowered out of an imported batch of that species. Such plants are rare, and cannot be identified until they flower, so that unflowered plants are not the least likely to be correct.

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